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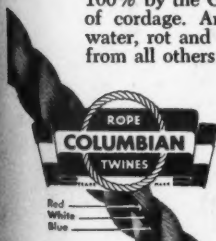
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The Lookout

Role of Fisheries Research

Three problems concerning world fisheries are the extent and potentiality of fish stocks, fishing intensity, and development of fish husbandry, according to Dr. Geoffrey Kesteven, Director of Fisheries Research in Australia.

Fishery research institutes will have a vital role in the coming years, because through research, governments and the fishing industry will receive information on fish stocks enabling them to plan orderly, rational development of fisheries, Kesteven declared.

With the rapid expansion in fish production recently and the need to catch increasing quantities of fish, he said it is important that investigations continue and develop on the quantities, sizes, ages, and sexual conditions of fish that can be taken without impairing the viability of the stocks.

Advances have been made in measuring fish resources, Kesteven stated, such as mathematical equations which relate reproductivity and growing potential to natural and fishing mortality.

Related to determining reproductive and growing potential is fishing intensity, which has grown steadily, particularly during the last ten years, due to factory ships and rapid expansion of fishing efforts. This growth is likely to be increased by new technological advances.

Increasing expansion and efficiency is reflected in the total world catch. In 1938, this amounted to 20 million metric tons and experts doubted it would exceed 25 million tons.

Today, the catch exceeds 30 million tons, and scientists are now thinking in terms of 60 million tons. Many fishery resources are not fully exploited and others are not worked at all. One scientist has estimated no more than 10 percent of the world's flat fish resources are fished.

There are many examples of rapid expansion, such as the South African pilchard fishery, the South Atlantic tuna fishery of Africa and South America, and new shrimp fisheries in the Mediterranean and other seas.

Kesteven pointed out that the world's sustained catch yield must be determined if fishing is to remain profitable. Such considerations, he said, lead to husbandry in the sea to protect and conserve fish resources.

One answer may be controlling growth of phyto-plankton—on which fish and other organisms feed—just as grass crops on which cattle browse are controlled.

NATIONAL FISHERMAN

The Fishing Industry Magazine

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May 1960

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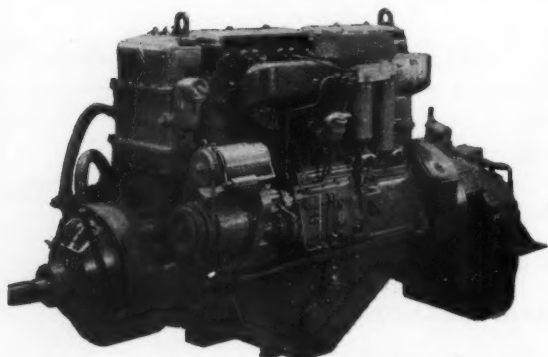
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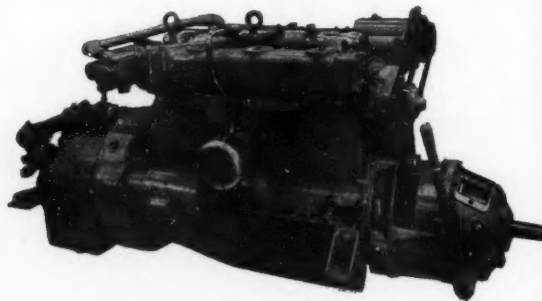
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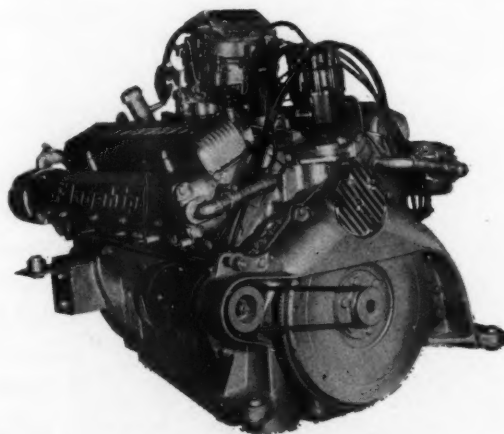
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FISHERY PROGRESS

► International Commission Fund

The House has passed the State, Justice, and Judiciary Appropriations bill for 1961 which includes funds for the international fisheries commissions in the State Department budget.

The sum of \$1,875,000 (a reduction of \$50,000 in the budget request and an increase of \$150,000 over the present fiscal year) is included for payment of expenses of the nine commissions which conduct studies to determine measures necessary for the preservation and expansion of fishery stocks.

In addition the halibut and salmon commissions regulate the fisheries under their jurisdiction, and the Great Lakes commission carries on a lamprey control program. Funds have also been included for the new Tortugas Shrimp Commission.

► Fish in Chain Restaurants

Chain restaurants are using more frozen foods, including fish, than ever before, according to a recent survey. Frozen fish totaling 96.5 million pounds are used yearly by a total of 16,000 chain food service installations in the U. S.

Forty major restaurant chains operating a total of 2,916 units reported using frozen fish in 2,666 units compared to frozen meats in 2,361 units, frozen vegetables in 1,721 units, and frozen fruits in 1,919 units.

The most popular frozen fish according to the survey are haddock and fillet of sole followed by shrimp, halibut, trout, scallops, cod, swordfish and perch.

► Wholesale Price Index Up

The March 1960 wholesale price index for edible fishery products (fresh, frozen, and canned) at 123.4 percent of the 1947-49 average was up 1.3 percent from the preceding month.

Supplies of many fresh fish and shellfish items were curtailed in March due to extremely stormy weather and resulted in higher wholesale prices for many products.

From March of last year the fishery products price index was down slightly due to lower fresh and frozen shrimp prices and frozen haddock fillet prices.

► Russian Ship Building Report

A Russian article on the building of large fishing trawlers has recently been received by the U. S. Bureau of Commercial Fisheries and is available on loan.

The article describes the construction (by the positional production line method) of a series of Diesel engine refrigerated fishing trawlers.

Details of the hull and engine construction, freezing facilities, and construction planning are included. A number of photos and drawings clarify and add interest to the descriptive material.

► Marine Oil, Meal Production

During February 1960, nearly 2 thousand tons of fish meal and scrap, and 51 thousand gallons of marine-animal oils were produced in the United States. This was a gain of 26 percent in oil production compared with the same month of last year.

Tuna and mackerel oil at 31 thousand tons was greater than the corresponding month of 1959 and represented 61 percent of the oil yield.

Tuna and mackerel meal was nearly 1.5 thousand tons and accounted for 75 percent of the month's total meal production.

► Pacific Halibut Conservation

The total catch of halibut from the North Pacific Ocean has increased substantially since the initiation of quota controls by the Pacific Halibut Commission, according to a research study conducted by the Department of Economics, University of Washington.

The study shows an increase in the catch per unit of effort, particularly in the areas subjected to the heaviest fishing effort. Though other factors affecting the natural environment may have contributed to the recovery of the fishery, the timing and geographic distribution of the increase in stocks, together with the basic biology of the halibut, lends weight to the conclusion that the conservative program was largely responsible.

► Interior Appropriations

Interior appropriations as passed by the Senate have increased funds for the Bureau of Commercial Fisheries for management and investigations of resources from \$6,249,000, allowed by the House, to \$7,051,000.

The increases included Exploratory Fishing and Gear Development at \$160,000, and for the continuation of the South Atlantic exploratory program (from Cape Hatteras to Cape Canaveral) started in 1959 with Saltonstall-Kennedy funds.

► Vessels Documented

During February 1960, 26 vessels of 5 net tons and over received first documents as fishing craft. Compared with the same month of last year, this was a decline of only 1 vessel.

The South Atlantic and Pacific areas led with 7 vessels each. The Chesapeake area followed with 4 vessels, while the Middle Atlantic and Gulf areas were next with 3 each. The remaining 2 vessels received first documents in the Great Lakes and New England areas. Forty-two vessels received first documents during the first two months of 1960.

► Edible Fish Imports Drop

Imports of edible, frozen, fresh and processed fish and shellfish into the United States during January 1960 decreased by 16.4 percent in quantity and 12.1 percent in value compared with the previous month.

The decrease was due primarily to lower imports of groundfish and other fillets (down 7.6 million pounds) and frozen albacore and other tuna (down 8.6 million pounds), and to a decrease in the imports of fresh and frozen salmon and shrimp.

Compared with January 1959, the imports for the first month of 1960 were lower by 7.3 percent in quantity but the value remained unchanged.

Lower imports of groundfish and other fillets (down 10.4 million pounds) and tuna other than albacore (down 2.7 million pounds) were primarily responsible for the decrease.

► Fish Meal Transportation

The Branch of Economics, Bureau of Commercial Fisheries working cooperatively with the National Fisheries Institute has participated in two separate conferences with railroad representatives for the purpose of obtaining a reduction of rates for shipment of domestic fish meal to the lower level of rates for imported fish meal, or an equalization of rates at a uniform level.

The first conference with representatives of eastern railroads was held in New York City. The second conference was held in Chicago with railroads providing service from Gulf Coast ports to the Midwest.

► Chemical Detector

An instrument called a photoelectric colorimeter has been developed to detect whether concentrations of a lamprey-killing chemical are getting dangerous for other fish, according to Professor Manning A. Smith of Bucknell University. The colorimeter registers a vivid yellow color when too much of the chemical is present in the water, he explained.

► March Frozen Fish Holdings

Holdings of frozen fishery products at the end of March 1960 were 145.6 million pounds or 4.6 million pounds more than were held in storage in March 1959.

Holdings at the end of March 1960 were 34.8 million pounds less than the amount held on the last day of the previous month.

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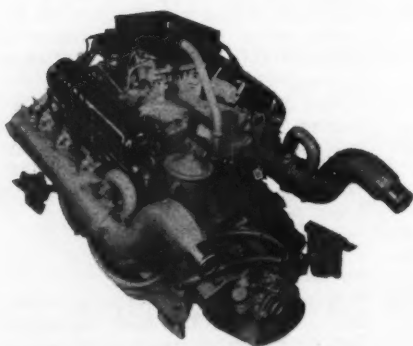
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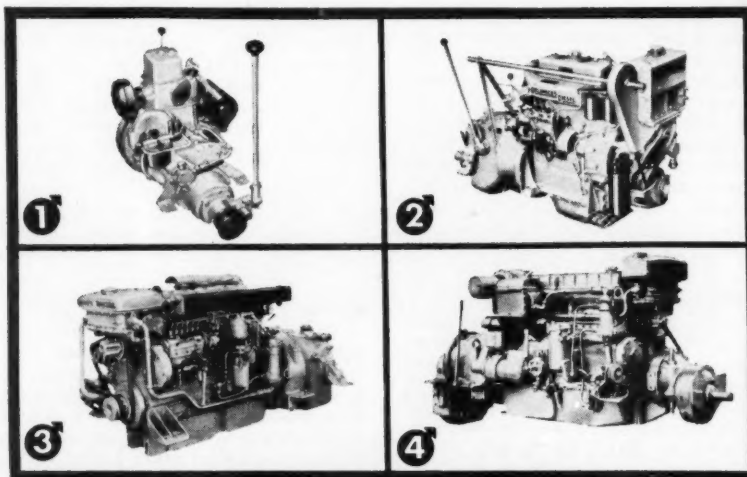
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Panel members at Food Additive session, National Fisheries Convention. Left to right: E. A. Ruthford, San Juan Fishing & Packing Co., Seattle; Sydney K. Opler, Florida Frozen Food Processors, Inc., Miami; Louis Vitale, Los Angeles Smoking & Curing Co., Inc., Los Angeles; Aaron

Gilman, Vita Food Products, Inc., Brooklyn, N. Y.; Edward F. Kline, American Cyanamid Co.; Dr. K. L. Milstead, Food & Drug Administration; Stanley Fass, Isaac Fass, Inc., Portsmouth, Va.; Rep. Thor Tollefson of Washington; H. E. Crowther, Bureau of Commercial Fisheries.

Quality Products Key to Fisheries Expansion

National Fisheries Institute 15th Annual Convention Considers Nutritional Needs, Quality Standards, Increased Efficiency

THE fishing industry can expand its capacity for production and increase consumer demand for fish products if it will take advantage of the opportunities at hand, according to spokesmen of the commercial fisheries and allied industries at the 15th Annual Convention of the National Fisheries Institute. They stressed that quality, nutrition, packaging and economy are the criteria on which the consumer will increasingly base his choice of diet in the next few years, as the population of the United States continues to grow.

Over 800 people attended the meeting, held in the Hotel Fontainebleau, Miami Beach, April 29-May 4. Elected president was T. D. McGinnes of Irvington, Va., who succeeds Ralph Carr of Mid-Central Fish Co., Kansas City, Mo. Also elected were A. R. Lantz, A. R. Lantz Co., Los Angeles, Calif., secretary; and Harvey Bundy, Jr., Gorton's of Gloucester, Gloucester, Mass., treasurer.

Quality Must Meet Nutritional Needs

Interesting the younger generation in eating fish will be one of the aims of the organization under the leadership of McGinnes, who is president of Virginia Seafoods, Inc., and has served N.F.I. as director. He also spoke of the need of an extension of the quality standards program for fish and shellfish, already under way with the cooperation of the fishing industry and the U. S. Bureau of Commercial Fisheries.

"As our fisheries become increasingly important as a source of protein food for human consumption, we must accept our tremendous responsibility of providing quality products in convenient form which will meet the nutritional needs of Americans today," McGinnes said.

"Scientists and sociologists are looking to our oceans to provide the means of survival for future generations," he continued. "Right now we are meeting this challenge by conserving our resources, developing quality standards, designing boats and fishing gear which will take fish and shellfish from depths hitherto unfished, and perfecting radar and sonar devices to help us locate schools of fish for human consumption."

Better packaging will attract housewives to purchasing more and more fish and shellfish, McGinnes said; and if N.F.I. teaches chefs the best methods of handling fish in restaurant kitchens, the fishing industry will attract a greater share of the volume-feeding trade than heretofore.

One of the biggest suppliers of oysters for frozen oyster stew, McGinnes said that money has been appropriated for research to fight various oyster pests and diseases and

that the oyster business is bound to come back to the magnitude of a few years ago and even surpass it.

Speaking of the studies made of the spawning habits of salmon, McGinnes said that similar research is now being done on the habitats and travels of other fish, such as trout, croaker and halibut.

The American economy in the 1960's is operating by the "free enterprise rulebook" for the first time since Black Friday, said Dr. Kenneth McFarland, General Motors Educational Consultant. The depression of the 1930's and artificial prosperity of the war and post-war years is over, McFarland said, "and the customer is king again." He told the Institute that it must do a selling job in the future because "there is no guarantee to win under the free enterprise system."

Salesmanship Key to Fisheries Prosperity

"We now have all the ingredients of prosperity—purchasing power, things to purchase, and means to produce—but people must combine these ingredients to achieve prosperity itself. Salesmanship is the key," McFarland pointed out that the population of the United States may double in the next 40 years, and the future population will base its diet on the foods which offer the "best deal." "The fisheries industry will be in a position to deliver more to the consumer if you will take advantage of your opportunity," said Dr. McFarland.

Enforcement of high quality standards is becoming the byword of the fishing industry, Assistant Secretary of the Interior Ross Leffler said to the wives of fishery executives at the convention. He explained that quality standards are now in effect for fish sticks, raw breaded shrimp, haddock and cod fillets, halibut steaks, and that standards are now being developed for 11 additional fish and shellfish products. This means that the homemaker can be assured of a high-quality product for the table.

(Continued on next page)



T. D. McGinnes, Virginia Seafoods, Inc., Irvington, Va., has been elected president of the National Fisheries Institute.



Institutional Market panel at National Fisheries Convention. Left to right: L. R. Alberti, Jr., Alberti's Seafood, Inc., Chicago; R. A. Erkins, Snake River Trout Co., Buhl, Idaho; Arthur H. Frohman, L. H. Frohman & Sons, Chicago; R. J. Gruber, Fishery Products, Inc., Cleve-

land; Richard Kulze, South African Rock Lobster Assn., New York; A. D. Levy, Washington Fish & Oyster Co. of Calif., San Francisco; D. R. Levinson, Ocean Products, Inc., Tampa; R. A. Littlefield, Seattle Seafoods, Inc., Seattle; I. A. Pass, Independent Fish Co., St. Louis.

He reminded his audience that fish and shellfish are not only excellent sources of high-grade animal protein, minerals and vitamins, but these products are generally easily digested and most are low in calories. All these qualities make these products ideal for serving children and older people, and for including in reducing and other special diets.

Leffler also recalled the announcement made last October of the important "nutritional breakthrough" in which it was demonstrated conclusively that oils found in fish and shellfish were cholesterol depressants. Cholesterol is the number one suspect in heart disease and hardening of the arteries. The depressant action of fish and shellfish oils is significantly greater than it is for the fatty acids from corn oil and other fats.

Further research must be carried on, he explained. "But if such research is completed successfully, it may be possible to produce and market a fish oil fatty acid for use as a means of adjusting cholesterol levels in the blood with a minimum of caloric intake."

Increased Efficiency Would Boost Industry

The opportunity for increased efficiency in commercial fishing is at an all-time high. Stewart Springer, Chief of the Branch of Exploratory Fishing, Bureau of Commercial Fisheries, said if the fishing industry will adapt the improved navigational aids and gear now available, it can in a few years make advances in productivity comparable to those made in agriculture during the past thirty years. "It's a matter of increasing the catch per fisherman" said Springer, "just as the yield per farm worker was increased".

It was announced at the meeting that preparations are



J. Roy Duggan, vice-president SeaPak Corp., St. Simon's Island, Ga. receives annual Service Award from National Fisheries Institute outgoing president, Ralph Carr, Mid Central Fish Co., at 15th Annual Convention.

being completed for an international conference on the nutritional value of seafoods to be held in Washington, D. C. during the fall of 1961.

According to Harold Allen, Assistant Chief, Technology Branch, Bureau of Commercial Fisheries, Department of the Interior, the conference will be an important phase of the President's program to free the world from hunger. It will be sponsored by the United Nations Food and Agriculture Organization. "The United States fishing industry will receive world-wide recognition as a result," Mr. Allen commented.

Allen, in discussing "New Frontiers in Fishery Research", said Government chemists are studying the feasibility of radiation preservation of fishery products, a process which promises to allow fresh fish to be kept under refrigeration safely for 10 days. He also spoke about a form of concentrated fish protein that is under consideration for use as food in space travel.

Demand for Seafood in Institutional Market

"What we need most at this time are portion cuts of solid fish fillets or steaks which will fit an airline casserole," C. L. Wienges, Hot Shoppes Caterers of Miami, Fla., said in his talk "Fish and Seafoods Service for the Airlines." Wienges was a speaker on the panel for Institutional Food Day, featured during the first general session of the National Fisheries Convention.

Other speakers were Harold E. Gotthelf, general purchasing agent of Howard Johnson's Miami, Fla; Marty Westerich, manager of the Morrison Merchandising Corporation, Tampa, Fla.; Dorothy Johnson, dietitian, University of Miami, Fla.; and Sol Geltman, catering manager for the Fontainebleau.

"The airline catering industry," Wienges said, "serves more than three million meals aloft a month. With the coming of the jets, the biggest selling point now is service. As a result the airlines are asking us to present them with a wider variety of dishes, including fish items."

Gotthelf, whose subject was "Fish and Seafoods in Chain Restaurants," told his audience, the use of portion-control fish and seafood is of the utmost importance. Because of the number of units and distances involved in a chain operation, supervision is not always as constant as the individual operator can supply. The traveling public when visiting our eating establishments, he said, expects and demands uniformity of product. Top-quality frozen processed seafood, plus the "no waste" factor, leads to economy and efficiency. He explained that "portion control fish" includes popular varieties demanded in different areas.

"Use of Fish and Seafoods in Universities and Colleges" was the subject of Miss Johnson's talk. "One of the greatest attributes of seafood products," she said, "is that there is very little doubt as to how tender and palatable seafood products will be after they are cooked, compared to the uncertainty involved such as one finds in most all other high-protein entree dishes. The ease with which this product can be handled is an asset which makes its use a must for a large institution."

"No time is lost in an emergency when you have sea-

(Continued on page 34)

115-Ft. Trawler "Maris Stella" Rejuvenated

Virtually rebuilt from deck up, fitted with new equipment including simplified pumping system

One of the most thorough renovating jobs ever performed on a fishing vessel was completed recently for the Portland, Maine trawler *Maris Stella*. This 31-year old veteran, formerly of Gloucester, Mass., was built at Essex, Mass. in 1929. She was purchased last year by R. H. Gowen who visualized the possibility of rejuvenating the 115 ft. vessel into an up-to-date, productive fisherman.

Today the *Maris Stella* is in tip-top condition and one of the best equipped vessels in the fleet. She has a new power plant which gives her added speed and the capacity of her fish hold has been increased. She is operated under the name of Standish Trawlers, Inc., of which Gowen is president, and Capt. Mike Clark is skipper. Her latest trip, landed at Portland on May 6, weighed out 190,000 lbs.

Despite the extensive repairs and alterations, plus a major replacement of equipment, the investment in the vessel is far less than would be required for a new craft of similar size.

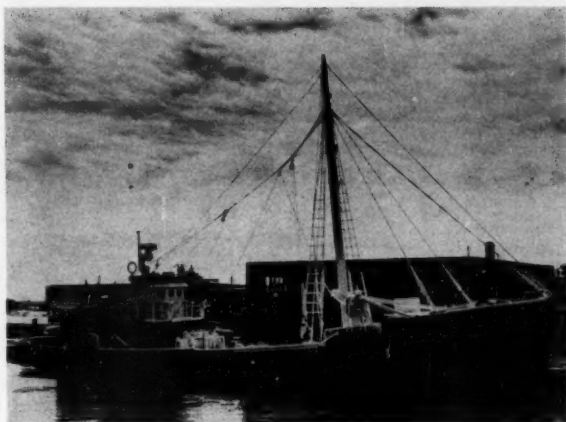
The vessel was virtually stripped from the deck up, with all new top timbers, several new deck beams, new whaleback, new quarter deck, new decking aft and new steel hatches being installed. The only superstructure not replaced was the steel deck house and trunk. The treenail fastened hull was found to be in exceptionally good condition, and only a few planks needed replacement.

The vessel, which has a beam of 23' and draft of 10'6", was completely recaulked and new fish and ice sheathing was applied. Underwater work was done by Story Marine Railway, South Portland, while all other repairs, reconstruction and equipment installation was handled by Gowen Marine Electric, Inc. at its dockside facilities in Portland.

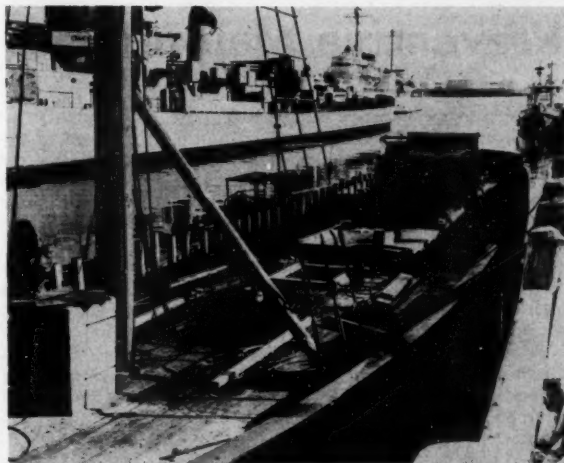
The capacity of the fish hold was increased from 184,000 to 200,000 lbs. of iced redfish by removing four spare fuel tanks forward. This added 5 feet or 1 pen length to the hold. These tanks, holding about 900 gallons, were compensated for by installing new tanks in two unused lockers in the after house. Placed at main deck level, they improved the stability of the vessel.

The pumping arrangement on the *Maris Stella* is noteworthy, being designed for maximum flexibility and simplicity of operation. For normal usage, there are no

(Continued on page 30)

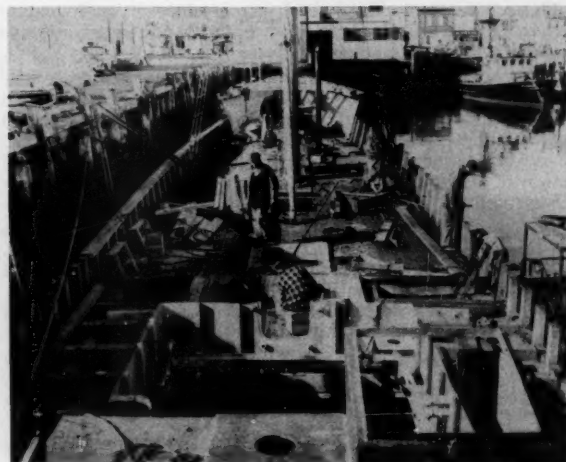
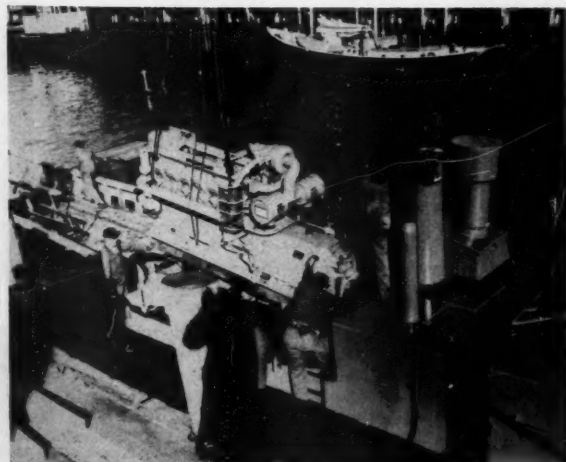


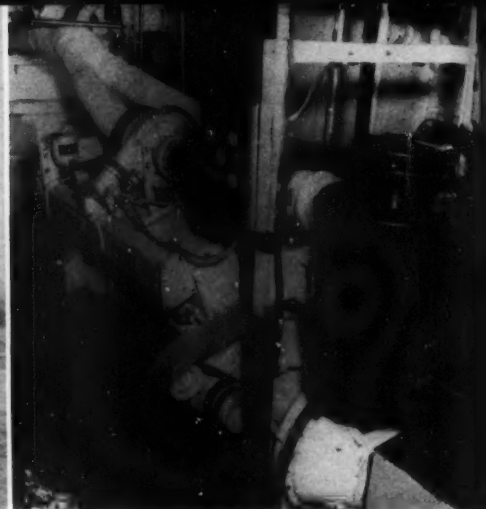
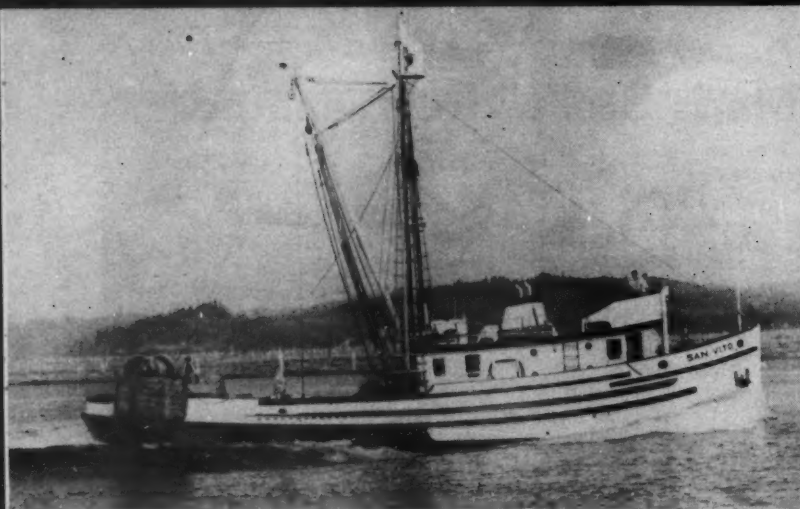
The 115' trawler "Maris Stella" after being completely renovated and refitted at Portland, Me. She is operated by R. H. Gowen and skippered by Capt. Mike Clark.



Fore and aft views of the "Maris Stella" during renovation at the Gowen Marine Electric, Inc. dock, Portland, Me. showing replacing of top timbers, deck beams and decking.

D397, 550 hp. Caterpillar Diesel being lowered into "Maris Stella."





The "San Vito", 78' seiner recently acquired by G. A. Hunter, Fields Landing, Cal., has been repowered with a Cummins VT-12-M Diesel engine by Elfving's, Coos Bay, Ore. She is operated by Capt. George Saubert and a crew of 3 for Eureka Fisheries. The new turbodiesel is rated 400 hp. at 1800 rpm. and drives a Wirkalla 55 x 42, 3-blade propeller through Twin Disc MG-521, 4.087:1 reduction gear. A Twin Disc front power takeoff is used to drive a 20 cfm. air compressor and gear box which in turn drives deck machinery and a high capacity centrifugal pump.

IMPROVED OPERATION, LONGER LIFE WITH Preventive Maintenance for Diesel Engines

The life expectancy of Diesel engines is naturally far from uniform. Of a hundred models produced at the same time, for example, two of the engines may die an accidental death within a year; a dozen of them may be rebuilt; and the condition of all the others may range from very good to poor or critical.

The reasons that make uniform engines develop individual ailments, cause some to wear out and fail after only a few hundred hours' operation while others last for ten or twenty times as long are of vital concern to the engine owner.

Engine owners and manufacturers' research departments have worked together and found positive ways of extending engine life. All their recommendations can be reduced to ten maintenance steps which will result in increased equipment availability, decreased operating expense, and improved working condition. The ten steps apply to any model or series of engine.

Keep Dirt Out of the Engine

Dirt composed of gritty mineral particles ranging in size from less than one ten-thousandth of an inch diameter to grains of coarse sand is the cause of most engine wear. The particles are hard enough to penetrate the toughest oil film and grind away the metal.

The abrasive effects of dirt can be easily illustrated by mixing a pinch of soil with lubricating oil and putting it between two pieces of glass. A little pressure exerted against one piece as it is rubbed against the other, will leave scratches when the dirt is washed off. Close examination of the worn-out parts of an engine will show signs of scratching, grinding, and lapping by dirt.

Valve stems, guides, faces, seats, cylinder and piston walls, and piston rings suffer most from dirty intake air. These parts may wear hundreds of times as fast with dirty intake air as with air filtered by a good cleaner. When dirt gets into lubricating oil, it scratches and wears out bearings and shaft journals.

A worn-out engine is one which has had only an ounce or so worn away from critical bearing or sealing surfaces. Replacement of these worn parts and the time loss may

cost hundreds of dollars—which would have been saved by keeping out the dirt.

Maintain Lubricating Film on Bearing Surfaces

Lubricating oil performs four functions in an engine: it reduces friction (heat and wear) by providing a slick film between bearing surfaces; it picks up carbon and other small particles and takes them to the oil filter where they are removed by the filter element; it cools pistons, liners and bearings; and it completes the seal of rings to pistons and cylinder walls.

There are two broad classes of lubrication failures—those caused by running an engine without oil which results in seizures of pistons or bearings within a few minutes, and failures due to poor or marginal lubrication, such as low oil pressure, dilution, partially clogged oil passages, or improper clearance. Downtime and overhaul expense for one engine failure may cost as much as 1,000 oil changes.

Regulate the Engine's Fuel

Fuel must be a type that will burn readily and completely within the engine. Hard starting, decreased horsepower, smoky exhaust, dilution of lubricating oil, excessive wear of various engine parts, and fuel pump and injector troubles are some of the penalties of using fuel oil which does not meet recommended specifications.

Fuel must be delivered to the combustion chamber at the right time and in condition to burn readily and completely. Fuel injection must occur at precisely the right degree of crankshaft rotation. The complete fuel charge in the injector cup must be delivered to the combustion chamber for every firing stroke. Metered fuel charges must be uniform for all cylinders. Fuel must be injected as a fine spray to mix with air and burn. The penalties for violations of these requirements are the same as for using poor grade fuel.

Fuel must be delivered to the combustion chamber in the right quantity, as the horsepower developed depends upon the amount of fuel being burned. Overfueling causes overspeeding and failure of turbochargers, and in a naturally-aspirated engine it causes all the troubles asso-

* An excerpt from the bulletin "Diesel Maintenance," prepared by Cummins Engine Co., Inc., Columbus, Ind.

(Continued on page 24)

Territorial Fishing Zones Unchanged

THE Second United Nations Conference on the Law of the Sea ended last month without reaching agreement on the breadth of the territorial sea or exclusive fishing zones. The United States-Canadian joint compromise proposal, with amendments submitted by Brazil, Cuba, and Uruguay, failed by one vote to get the necessary two-thirds majority in Plenary in spite of numerous and generous fishery concessions made by the U. S. The vote was 54 for and 28 against, with 5 abstaining and 1 absent.

The U. S.-Canada Compromise

The United States and Canada had joined forces earlier in an effort to get world support for 6-mile territorial seas. The United States agreed to put a 10-year deadline on "historical" rights to fish in an additional outer-6-mile zone. The compromise would have preserved the 6-plus-6 formula and provided that nations which had fished in the outer 6 miles for the past five years could continue to do so until October 31, 1970. Following is the text of the joint proposal:

"1. A State is entitled to fix the breadth of its territorial sea up to a maximum of six nautical miles measured from the applicable baseline. "2. A State is entitled to establish a fishing zone contiguous to its territorial sea extending to a maximum limit of twelve nautical miles from the baseline from which the breadth of its territorial sea is measured, in which it shall have the same rights in respect of fishing and the exploitation of the living resources of the sea as it has in its territorial sea.

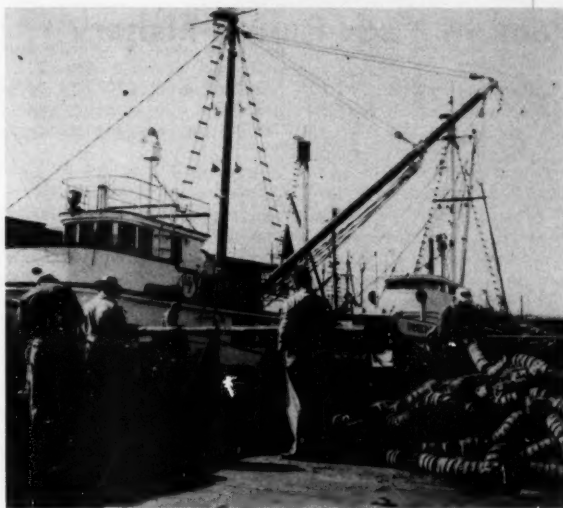
"3. Any State whose vessels have made a practice of fishing in the outer six miles of the fishing zone established by the coastal State, for the period of five years immediately preceding January 1, 1958, may continue to do so for a period of ten years from October 31, 1960. "4. The provisions of the Convention on Fishing and Conservation of the Living Resources of the High Seas, adopted at Geneva, April 28, 1958, shall apply (necessary changes having been made) to the settlement of any dispute arising out of the application of the foregoing paragraphs."

A three-power amendment to the U. S.-Canadian proposal, which according to Conference rules had to be voted on prior to the basic proposal, received the required two-thirds majority with a vote of 58 for, 19 against and 10 abstentions. However, when this amendment was combined with the joint U. S.-Canadian proposal, both the proposal and the amendment were defeated.

While the U. S. delegation openly supported the adoption of the three-power amendment, members of the U. S. fishing industry vigorously opposed U. S. support of such an amendment. The amendment would have given any coastal state the faculty of claiming preferential fishing rights in any area of the high seas adjacent to its exclusive fishing zone (12 miles in the U. S.-Canadian proposal) when it was scientifically established that a special situation or condition made the exploitation of the living resources of the high seas in that area of fundamental importance to the economic development of the coastal state or feeding of its population.

Chairman of the U. S. delegation, Arthur H. Dean, addressing the Conference in behalf of the joint U. S.-Canadian compromise proposal, had stated that it clearly would satisfy both the needs and future aspirations of coastal states, while at the same time it would protect foreign fishing interests from injury.

Dean asserted, it was the only proposal acceptable to enough nations for possible adoption by the Conference. He emphasized the two concessions which the United States made—placing a time limitation on foreign fishing rights, and making the limit 10 years. The proposal thus goes more than halfway to meet the objections of other countries, he said.



Fishermen prepare for the season as they mend herring nets at Fishermen's Terminal in Seattle, Wash.

Multi-lateral Settlements Necessary

The many complex and varying problems of basic fishing rights in such a proposal, Dean continued, would need to be implemented by bi-lateral or multi-lateral arrangements consistent with the basic principles now established, so that the principles may be applied in an orderly and practical manner. An important new principle concerning fishing jurisdiction thus would have been embodied in international law by the proposal, Dean said.

Dean also noted the possibility that the 54 countries who voted for the U. S.-Canadian proposal might ultimately negotiate a multilateral treaty and deposit it with the United Nations, leaving it open for further signatures. Such a move is "under discussion" he said.

The only Plenary vote receiving the required two-thirds majority was on a proposal introduced by Ethiopia, Ghana, and Liberia, providing for technical assistance, information and capital to be made available to under-developed coastal countries through the United Nations and its specialized agencies. It also provided for the referral of fishery problems to various levels of the United Nations but made no mention of the territorial sea or fishery jurisdiction. The favorable vote was 68 for, none against, and 20 abstentions.

All other proposals before the Plenary were defeated. The original proposal of Iceland, on which a majority had abstained in Committee, was defeated in Plenary, 25-38-26. An Icelandic attempt to amend the U. S.-Canadian proposal by conferring special rights in areas of the high seas to people overwhelmingly dependent on coastal fisheries was rejected by a vote of 24-48-15.

Finally, an Afro-Asian-Mexican-Venezuelan ten-power proposal, which had earlier been 18 and 16-power proposals, was defeated by a vote of 32-38-18. This final version of the 12-mile proposal provided for shelving the matter of the territorial sea for five years, when the question of calling a third Law of the Sea Conference might be taken up by the UN.

In the meantime, nations independent before October 24, 1945, would limit their territorial water to whatever breadth they had already proclaimed, but they would have been able to exercise all rights of sovereignty with respect to fishing out to a 12-mile limit.

PACIFIC COAST

Russians Utilize Bering Ice Pack in Year Round Fishery

Russian fishermen, with a "floating city" of 2,500 persons in the Bering Sea off Alaska, and operating year-around despite the ice pack, insist they are taking only fish passed up by Americans.

The Russians seem to have mastered the art of operating in pack ice, turning the ice to advantage instead of permitting it to remain an impediment. The large freezer ships remain deep in the ice pack where the sea is always calm. Dozens of small, steel-hulled trawlers operate over a radius of 100 miles.

The Russian commander told visitors from Seattle, Wash., that his fleet is not touching king crabs, halibut, or any other fish—only flounder, "a fish that Americans have never taken from this area."

However, Lowell Wakefield of Seattle, president and general manager of Wakefield Fisheries, said the Russians are operating an extensive crabbing operation about 28 miles northwest of Amak Island—an area traditionally fished by the Americans and Japanese.

The Americans returned to Anchorage, Alaska after a week's trip into Bering pack ice led them to a fleet of 58 ships of the Russian expedition. To reach the fleet they had to travel nearly 700 miles, including 100 miles in the ice pack.

The trip was made aboard the 150' fishing vessel *Deep Sea*, operated by Howard Wakefield of Seattle, vice president of Wakefield Fisheries.

The American party included Dr. William A. Smoker, research chief for the Alaska Fish & Game Commission, formerly of Seattle, and Tak Miyahara, Seattle, fishery research biologist for the Bureau of Commercial Fisheries, U. S. Fish and Wildlife Service.

Aleutian Salmon Migration Studies Made By Washington University

Two University of Washington College of Fisheries research vessels are on a 5-month salmon-tagging voyage along the Aleutian Islands to study high seas salmon migration. The cruise is part of a long-range salmon migration study in the North Pacific by the Fisheries Research Institute of the college. Now in its fifth year, the project will be conducted under a \$256,000 contract with the U. S. Bureau of Commercial Fisheries.

Two chartered purse-seiners, the *Commander* and the *Renown*, will make the voyage. University scientists on the *Commander* will be Allan C. Hartt, senior Fisheries biologist, and Michael Dell, assistant biologist. The vessel will be under the command of Capt. Clifford Anderson. On the *Renown*, the scientists will be Ben F. Jones, senior biologist, and Michael Dahlberg, assistant biologist. The vessel commander will be Capt. Birger Hansen.

The area around the Aleutian Islands is a "nursery" where many North American salmon go to mature before beginning their long journey back to their native rivers. In previous years, some of the tagged fish have been recovered in the rivers of Russia and Japan and have been found as far south as Oregon.

From a scientific standpoint, the long-term project is providing important new information on the life history of salmon. The results also will have an important effect on methods of conserving the valuable salmon runs.

Bering Sea Halibut Fleet Doubles

More Seattle, Wash., halibut boats will be fishing in the Bering Sea and other areas west of the Shumagin Islands this year than ever before. Thirty-nine Ameri-

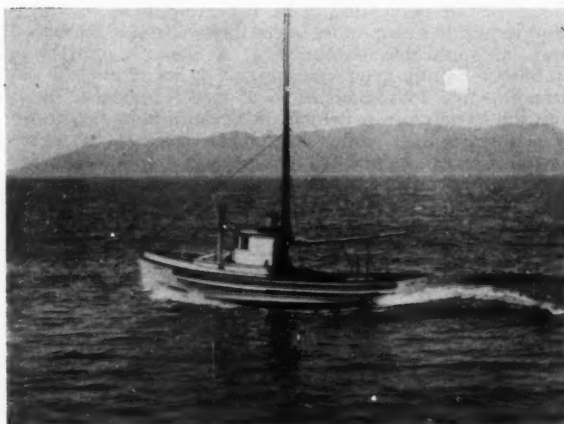
can boats, mostly from Seattle, and 39 Canadian vessels are expected to fish in the area, F. Heward Bell, assistant director of investigations for the International Pacific Halibut Commission, said recently. This is double the number which fished there last year.

The Bering Sea halibut fishery is comparatively new; 1960 is only the third year that it has been a major fishery. While Russia has a large fishing fleet in the Bering Sea, reports indicate that the Russians are fishing for other species, rather than halibut.

Columbia River Salmon Tagging

Results of the tagging of salmon on the Columbia river in Oregon revealed that it takes approximately 12 days for chinook to move upstream from the lower Columbia river to the upper. Final figures from Francis Watt's boat, *Whisper*, tagging on the Oregon side, showed 217 fish taken, 194 of which were tagged. The Washington Department of Fisheries boat *Betty A* took 173 fish, with 455 being tagged.

The two boats trailed barbed hooks on one side and barbless hooks on the other. The *Whisper* reported 119 chinooks taken on barbed hooks and 98 on barbless, while the *Betty A* took 84 on barbed and 89 on barbless. Both Oregon and Washington biologists reported taking the largest fish with barbless hooks.



M. Olsen of Astoria, Ore., owns the salmon and tuna boat "Kurt" which is powered by a 110 hp. Chrysler Crown engine that turns a Michigan propeller. The 36' craft is equipped with Delco batteries, Northill anchor, Bendix depth sounder, Northern telephone, Mustad hooks and is finished with International paint.

Fisheries Technologists Meet in Astoria

Fisheries technologists from the U. S. and Canada attended the Pacific Fisheries Technologists annual meeting at the Gearhart hotel near Astoria, Ore., recently.

Among participants in the program were Charles Butler, former Columbia River Packers Association biologist, now with the Federal Bureau of Commercial Fisheries; DeWitt Gilbert, former Astorian, now editor of Pacific Fisherman; Lyle Anderson, of Bioproducts, Astoria; Paul Autio, local mink rancher; and Duncan Law, of the Oregon Seafoods laboratory, Astoria.

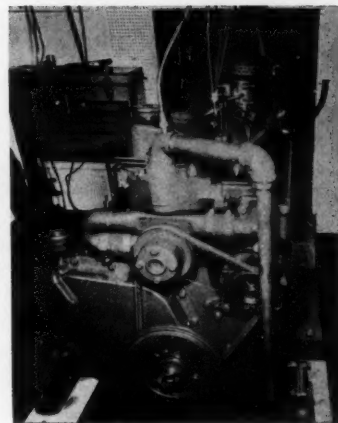
Other speakers included James Peifer, Austin, Minn., discussing effects of cholesterol on the blood, and Frank Piskur, of the Bureau of Commercial Fisheries laboratory, College Park, Md.

California Fishing Boats Change Hands

The 44' *Three Hearts* has been sold by Mrs. Florence Wasson to Ray North and Milton Armstrong. The boat has an 8 ton hold and a GM 6-71 (6) engine with 1.5:1 reduction. Bill Tomlinson, Jr. has sold his 43' *Husky* to Fred Maxwell of Napa. The boat's engine is a Chrysler Royal (8) 141 hp. with 3:1 reduction.



Glen Collins of Ketchikan, Alaska, has installed a 6-cylinder Barr marine Diesel rated 96 shaft hp. at 2,250 rpm. turning a 38 x 24½ wheel through 4:1 Capitol hydraulic reverse-reduction gear. Cruising speed for the 42' x 12'4", 21 gross-16 net ton boat is 10 mph.



Oregon Requested to Set Shrimp Quota. By California Fisheries Group

The Oregon Fish Commission held a hearing on shrimp quotas and the spring Columbia salmon season recently in Portland, as California Fish and Game Department representatives asked the Oregon commissioners to put a quota on shrimp landings coming into Brookings on the southern Oregon coast.

Ed Best and Walter Walstrom represented the marine fishery division of the California shrimp beds. They pointed out that with new shrimp processing facilities opening at Brookings, boats would be tempted to come into the Oregon port after California quotas were filled. Oregon has no shrimp quotas and an unexplored but potentially great shrimp fishery.

Robert F. Clark, speaking for the new, Oregon shrimp industry at Brookings, said a quota would restrict development. He asserted the California quota system was in disrepute with other fishery departments including the U. S. Fish and Wildlife Service. Clark also stressed that the otter trawl web used by Oregon fishermen has a square web that passes the small shrimp as a conservation measure.

A brief review of the Columbia salmon situation was given the commissioners by the staff. The Columbia has been higher than normal but fairly clear and no delay of the Columbia run was anticipated. The commission has emergency power to shorten or lengthen the season, thus the review.

Chinook catches at the Woody Island test fishing site above Astoria, where salmon are tagged and released, are running similar to last year. Jergen Westheim, director of research for the Commission, said the Columbia had begun to fall and clear, which is ideal for quick salmon movements. He said the high muddy water, which retards migration, could have been a reason for the slowness of the Willamette segment of the run.

Prevent Unloading of Tuna Boat

A union picket line from San Diego, Cal., recently prevented the converted fishing boat *West Point* from unloading 160 tons of tuna at the Franco-Italian cannery on Terminal Island in Los Angeles Harbor.

Pickets from the Cannery Workers and the Fishermen's Union in San Diego said they were protesting a decision by the *West Point's* crew to switch its allegiance to a rival fishermen's union in San Pedro.

California Resumes Salmon Studies

Studies of fingerling salmon on their way to the sea has been resumed by the California Department of Fish and Game, after a cold water disease which killed off many of the fingerlings used in the project suspended operations.

The salmon are to be fin-clipped and released according to the original plan, at three sites—Coleman Hatch-

ery, Rio Vista, and a site consisting of 50 percent saline and 50 percent fresh water, usually found in San Pablo Bay.

The cold water disease, thought to be a virus, generally disappears when temperature of hatchery water rises above 50 degrees. The affliction has been under study by the Seattle Disease Laboratory of the U. S. Bureau of Sports Fisheries and Wildlife.

Oregon Hatchery Flies Salmon Fry to Rearing Experiment Site

Transporting 1500 unfed chinook salmon fry by plane from Portland, Ore., to Boise, Idaho, was accomplished recently, when Wendell E. Smith, biologist for the Idaho Power company, needed fish for a limited pilot experiment in natural rearing of fall chinook salmon. It was a gamble that the tiny fish would survive the trip, but the experiment worked and may be a milestone in transferring other types of fish in the future.

Sandy River, Ore., hatchery personnel, under the direction of Dick Harrison, prepared the cargo in 4 air-tight plastic bags, each bag containing 1½ gallons of pre-cooled water, and 375 fish.

The air was removed from the bags, which were then filled with oxygen, placed in a cardboard shipping carton and flown to Boise. Although salmon fry can survive up to 23 hours under such conditions, this was the first time they have been airborne.

Columbia River Snag Clearing Begun

The Columbia River Fishermen's Protective union was scheduled to begin snag clearing operations in lower Columbia river last month according to the Oregon Fish Commission. Purpose of the work was to clear snags from fishing drifts prior to start of the commercial fishing season.

William Whitten, diver, was to be in charge of the clearing which would extend upriver as far as Columbia City according to plans. A large-mesh net was to be used for locating snags, which were to be hoisted to a scow.

Big Creek Salmon Plant Nears 2 Million

Approximately 1½ million, 1959, brood salmon have been released from Big Creek hatchery by the Oregon Fish Commission. There were nearly 500 thousand 1959-brood, fall chinook released in Big Creek at the hatchery that were about 3 months old, and 1.2 million 1959 chum released into Mill Creek from the Big Creek hatchery.

Oregon Continues Salmon Plantings

Oregon waters were stocked recently with 3,000,000 yearlings which included 1,850,000 silver salmon, 453,000 fall chinook, 385,000 chum, 138,000 steelhead, 87,000 spring chinook, and 27,000 blueback, according to the Oregon Fish Commission.

The Fish Commission is impressed with the excellent



The tuna seiner "Santa Helena" out of San Pedro and owned by Van Camp Seafood Co., has equipped its 30' x 15', special-purpose skiffs with Osco-Ford 6DF Diesel engines (installed by Fellows and Stewart of Wilmington, California). These skiffs make net sets and also are called upon to maneuver the 136' mother ship under the severest sea conditions. The "Santa Helena" operates in West Coast waters from Alaska to Chile. Most of the skiffs were built by Mardesich Boat Works of California.

conditions of the fingerlings liberated during the first 3 months of this year, especially yearling spring chinook, silvers, and steelhead.

Monterey Purse Seine Association Reactivates, Plans Market Build-Up

Encouraged by the reappearance of increasing numbers of sardines in local waters the past two seasons, the inactive Monterey (Cal.) Purse Seine Association called a meeting of fishermen and cannerymen to see what they could do about keeping the Monterey fishing industry operating.

President Anthony Lucido said the purpose of the meeting was to lay the groundwork for fishermen to deal with the cannerymen and try to get the business on its feet.

The fishermen and cannerymen discussed a possible nationwide advertising campaign to build up the market. The campaign, if undertaken, would be sponsored by cannerymen and purse seine operators.

Paul Lucido

Joseph Paul Lucido, one of the last pioneer, commercial fishermen of Monterey, Cal., died at his home recently. Capt. Lucido skippered seiners up and down the west coast as far as Alaska during the heyday of the fishing industry.

California Salmon Season Begins Big

The first week of the California commercial salmon season got off to a good start, recently, as hundreds of boats left central and southern ports. With the season not two days old, the boats converged on a heavy school off Pigeon Point about fifty miles north of Moss Landing. Excellent fishing lasted several days, halting temporarily because of a 35 mile an hour northwest wind. Fishermen coming into Moss Landing with large catches indicated that it had been a bonanza trip.

Trawlers Forced From Crab Area

The Russian crab-fishing fleet maneuvered 7 United States trawlers away from an area of heavy North Pacific crab runs recently, in an incident in which no violence was reported.

Related by radio from the *Deep Sea* of Wakefield Fisheries, the report said the 7 trawlers had found a heavy migration of king crabs and were fishing with drag nets. The Russians sent small boats into the area and covered it with tangle nets. The nets forced the Americans to move away.

NORTH ATLANTIC

Maine Raises Sardine Goal To Meet Increased Demand

The Maine Sardine Council's executive secretary, Richard E. Reed, said recently the industry has a production goal of 2,000,000 cases in contrast to the 1959 short pack of 1,750,000 cases. The industry's inventory situation is a favorable one with many types and varieties of pack completely sold out. Prices and demand for the 1959 production have remained firm for the past several months, Reed stated.

He said that there had been an increased demand for institutional and military type packs as a result of sales and promotional work by the Council. The demand should further increase in 1960, Reed added.

The 1960 Maine sardine canning season opened last month, but no factories were expected to begin operations for several weeks. Last year the first fish in sizeable volume were not taken until early June.

The story of Maine's \$20,000,000 sardine industry is being told by the Maine Sardine Council in a comic book aimed at school children as an educational feature.

Entitled "Ricky and Debbie in Sardineland", the book takes 2 city youngsters to fishing grounds and canneries, looks into the past and future of the industry, and will be distributed free through schools, supermarkets, etc.

The book is one phase of a youth education program, started last year, which includes a film strip on the industry, and the use of home economists to introduce nutritious, low-cost sardine recipes in the school lunch programs.

Maine Clams Making Comeback

The Maine clam is staging a strong comeback. Shellfish diggers and Sea and Shore Fisheries officials report heavy sets of clams have survived in coves and bays where they were virtually nonexistent a few years ago.

Dana E. Wallace, biologist for the Sea and Shore Fisheries Dept., believes the virtual disappearance of the green crab from some areas, and a sharp decline in green crab population in others, has influenced the comeback. He feels that the heavy ice conditions did much to kill off the green crab.

Wallace said he has been conferring with Harpswell town officials regarding a good set of clams at Stover's Cove. Fishermen report survival of a set in Maquoit Bay in Brunswick. Robert L. Dow, research head for the Sea and Shore Fisheries Dept., said there are good concentrations in other areas south of Brunswick.

Expert Says Maine Sardines Aid Teeth

The head of the Harvard Department of Nutrition, Dr. Fredrich Stare, recently praised Maine sardines as good tooth food. Stare told the Maine Sardine Council that the edible bones supply nutrient fluorine which helps prevent dental decay. He has long maintained that Maine sardines also contain a proper balance of protein and fats that help to keep blood cholesterol levels down.

Stare complimented the sardine industry on its sponsoring research aimed at selling sardines, and improving health. The Council makes an annual grant to Harvard's nutrition work and is sponsoring an extensive fats-cholesterol project at the Massachusetts Institute of Technology.

Medan Now Fishing from Portland

The 136' steel trawler *Medan*, operated by Fulham Bros., has returned to Portland from Boston. Capt. Oscar Jacobsen is skipper and Alec Dentremon is engineer.

Scallop "Midnight Sun" Makes Maiden Voyage

A successful maiden voyage which produced 12,200 pounds of scallops, was completed on May 3 by the 72-foot *Midnight Sun*. Captain-owner of the new scalloper is Magne Risdal of Fairhaven, Mass.

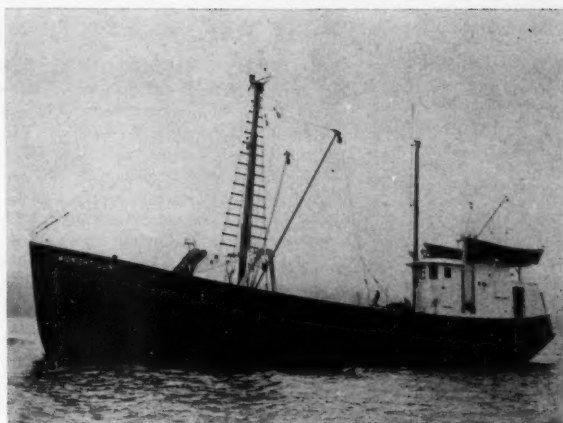
Built by Harvey F. Gamage, Shipbuilder, South Bristol, Me., from Albert G. Condon designs, the vessel was launched on April 9. She is similar to the *Sea Gold* and *North Sea*, with beam of 17' and draft of 8'6". Framing is 3" double sawn oak on 16" centers, planking is 2" oak and decking is 2½" pine.

The *Midnight Sun* is powered by a General Motors 12V-71 Diesel, rated 335 hp. at 1800 rpm., furnished by Hubbs Engine Co. The engine is fitted with Twin Disc Model 512, 4.15:1 hydraulic reverse-reduction gear and 3:1 power take-off for operating the 1353 Hathaway winch. A 5-blade, 52 x 38 Columbian propeller turns on a 4" Tobin Bronze shaft with Goodrich Cutless rubber bearing and Hathaway flax-packed stuffing box.

Electronic equipment, supplied by Marine Radio & Electric Co., Inc., Fairhaven, Mass. includes a Model AE101M, 100-watt Apelco radiotelephone, Bendix DI-1 depth sounder and two single unit APN/9 loran sets. The vessel has two 12" Carlisle & Finch floodlights, and Hathaway reduction gear steerer.

Crew accommodations provide for 8 men in the fo'c's'le and 2 in the after cabin, with the Captain's stateroom aft of the wheel house. The galley has a No. 10340 Shipmate oil-fired range, and there is a No. 30 Shipmate hot water heating boiler. Fuel capacity is 3000 gals. in four tanks.

There is a set of 32-volt Type 8HHG-31 Surrrette batteries for lighting service, and a 30-volt set of the same type for engine starting. Auxiliary power is supplied by an EHS Deseco unit with a Model SL2, 2-cylinder, 8½ hp. air-cooled Lister Diesel which drives a 32-volt Kurz & Root generator and 1½" Viking pump. Other pumps com-



Capt. Magne Risdal of Fairhaven, Mass., and his 72' scalloper "Midnight Sun." The vessel was built by Harvey F. Gamage, So. Bristol, Me., and is powered by 12V-71 General Motors Diesel, furnished by Hubbs Engine Co.



prise a 2" Marine Products for bilge service, a similar one for deck use, and a 2" Edson hand deck pump.

Boats Hauled at South Portland

Boats recently hauled by Story Marine Railway, South Portland, Me. include the 54' dragger *Mary & Jennie*, owned by Thomas Jordan of Portland. She was caulked, had new zincs and stop-water on keel, refastening and ice sheathing.

The sardine carrier *Royal*, operated by Royal River Packing Co., Yarmouth, had her rudder backing chain and sea valves repaired, stern bearing repacked; and the stern post and skeg were painted with Appexior asphalt coating.

Lawrence Scola's 69' dragger *Lawrence Scola* of Portland had a complete paint job and zincs replaced. The carrier *Lou Ann*, operated by Bath (Me.) Canning Co., was fitted with new generator box and stop-water on deck, new shoe, had her forward deck caulked and BJ stern bearing installed. The bottoms of all the boats were cleaned and painted with Henderson & Johnson Gloucester paint.

New Maine Lobster Boats

Capt. Henry Barnes of So. Harpswell, Me. is building a new 28' lobster boat which will be powered by a 185 hp. Flagship engine with 1.5:1 Paragon hydraulic reduction gear. Richard Prosser of Cundys Harbor, Me. is putting a 185 Flagship in his new 35' lobster boat. Both engines were sold by Harbor Supply Oil Co., Inc., Portland.

New Bedford Scallop Festival in August

New Bedford's (Mass.) third annual Sea Scallop Festival will be held, August 12-14. Lieutenant Colonel Charles E. Friedman is chairman of the Exchange Club committee planning the event.

New Bedford Co-op Would Increase Competition to Raise Dockside Prices

The New Bedford, (Mass.) Seafood Co-operative Association has received approval of its request to use a section of Union Wharf property in Fairhaven for fish and scallop packing. The Co-operative members feel more buyers will spur competitive bidding for fish and scallops, resulting in higher dockside prices.

Capt. Rudolph Matland, association president, said the co-operative plans to continue in the same business which has been conducted by the present tenant—Mutual Fish Packing and Icing Co. The property is not being used at the present time.

The Co-op plans to repair the present structure and construct a \$5,000-\$6,000 addition. Twenty-five or more persons would be employed. Fairhaven officials, in approving the transfer of leases to the New Bedford Co-op, feel the move will be an asset to their town.

New Bedford Scallop Study Funds Urged

Senator Saltonstall and Representative Keith of Massachusetts are urging the Small Business Administration to dip into special contract funds to support a scallop marketing study by the New Bedford Institute of Technology.

Harold Putnam of Needham, Mass., counsel to the Senate small business committee, said the Small Business Administration has expressed great interest in aspects of the scallop marketing study proposed by the New Bedford Institute.

If budgetary conditions permit, officials have talked hopefully of being able to provide around \$10,000 for special contract studies with selected institutions.



JAMES SEYMOUR, Jr. of Cliff Island, Me. and his new 33' x 10'3" x 3' lobster boat. She was built by Baum's Boatyard, Kennebunkport, and is powered by D273, 85 hp. Allis-Chalmers Diesel, furnished by Harbor Supply Oil Co., Portland. Equipment includes 1.5:1 Model 2HED Capitol hydraulic reduction gear, 19 x 15 Columbian propeller, Bendix DI-5 depth sounder. Gulf fuel and lube oils are used.



Five-Point Program Opposing Meal Imports Initiated

A five-point program to fight Peruvian competition in the fish meal industry was charted, recently, as a Gloucester (Mass.) Council sub-committee met with Congressman William H. Bates.

The Bates led program would: Ask the nation's railroads to transport domestic production of fish meal at the same rates as the railroads are now transporting foreign fish meal; Get the State Department to sponsor and finance visits of domestic fisheries representatives to foreign countries; and Ask the State Department of Agriculture to buy the surplus fish meal produced in the United States to stabilize the industry.

The plan would also seek federal funds and knowledge to assist fish meal plants in eliminating offensive odors from cooking raw materials, and would learn if the United States government is financing Peruvian fish meal production, and if so, to take steps to stop such a program.

Bates opened the conference by reading a four-page report made by Donald L. McKernan, director of the U. S. Bureau of Commercial Fisheries, which noted that domestic production increased from 260,000 tons in 1951 to 386,000 tons last year and that corresponding fish meal imports increased to 147,000 tons. The report revealed that Peruvian fishmeal production had jumped from 22,000 tons in 1955 to 310,000 tons in 1959. Continued expansion is expected in 1960. Within the last 2 years, Peru has become the world's principal exporter of fish meal.

New Bedford Scallop Landings Increase

For the first 3 months of 1960 in New Bedford, Mass., scallop landings totaled 3,289,000 pounds, almost 600,000 pounds more than was unloaded during the same time in 1959. The heavy production has continued although some scallopers are reported to be fishing out of other ports.

Electronic Gear for New Bedford Boats

A new 32-volt Sperry 5 Radar has been installed in the 60' dragger *Phyllis J.* owned by Anthony Rose of New Bedford, Mass. and skippered by Capt. Clifford Trott. The 72' New Bedford dragger *Brant*, owned by Capt. Thomas Tonnesen and engineer Torstein Olafsen, has a new Edo Fishscope. Capt. Joseph E. Lima's 57' dragger *Sister Alice* of New Bedford has a new Bat Lavoie radar. All of the equipment was sold and installed by Marine Radio & Electric Co., Inc., Fairhaven, Mass.

New Bedford Boat Lands Big Catch

New Bedford's (Mass.) largest single catch of fish thus far for 1960 was unloaded by the dragger *Pauline H.* last month. Her catch totaled 104,000 lbs., including 62,000 lbs. haddock, 25,000 lbs. cod and 11,000 lbs. lemon sole. Capt. Lief Jacobsen of Fairhaven is skipper and owner of the highliner.

Fish Firm May Move to Gloucester

Bonnie Cold Storage Inc., 295 Northern Avenue, Boston, may move to Gloucester, Mass. with a complete operation of fish-sticks manufacture and groundfish and redfish filleting. Although plans are subject to revision, the Company has contemplated starting with a five million pound freezer.

The Gloucester operation would be known as the Boston Bonnie Fisheries. Hy Trilling, operator of the company, gave 3 reasons for the move: Gloucester labor conditions are better, Gloucester has redfish; and is more convenient for unloading.

If Gloucester land and water-frontage is found, Company plans call for "converting its Boston properties into cold storage." The Boston freezer is of 2 million pounds capacity and may expand to 7 or 8 million, according to Trilling. The Company trawler, "Bonnie," would fish out of Gloucester.

New Radar for Boston Boats

A new Kelvin-Hughes radar has been installed on Capt. Vincent Tringali's dragger *Agatha & Patricia* of Boston, Mass. The instrument was sold by Louis Posner Marine Radio Equipment, Inc.

Posner has installed a Model 303 Decca radar aboard the trawler *Red Jacket*, owned by Usen Trawling Co. and skippered by Capt. Peter McGuire.

Gloucester Dragger Sinks

Capt. Jim Bertolino and his crew escaped, recently, when the 47', Gloucester, Mass., fishing dragger, the *Anna Guarino*, sank seven miles south of Eastern Point. The vessel reportedly struck a submerged object.

New Gorton's Director

Harold B. Bickow has been elected to the Board of Directors of Gorton's of Gloucester, Inc. to fill the vacancy left by the late George Putnam. Bickow had been vice president in charge of Gorton's Miami shrimp plant, and previously, the secretary and treasurer of Florida Frozen Food Processors, Inc.

Operations to be Continued

By Gloucester Meal Plant

Edward J. MacLeod, general manager of Gloucester By-Products Inc. said recently the Company plans to stay in operation this season in spite of low cost competition. "We are going to take the supply of four average-sized seiners if they are willing to go fishing, plus the fish waste from the filleting companies."

Suggests Jap Oysters for Cape Waters

Introduction of Japanese oysters in Eastern coastal waters to supplement the native supply was suggested to selectmen, shellfish wardens, and oyster growers at

South Yarmouth recently by Frederick C. Wilbourn Jr. of the State Marine Fisheries Division.

Speaking at the monthly meeting of the Barnstable County Selectmen's Association, Wilbourn said the prolific and fast growing Japanese shellfish is a way of bolstering oyster business on the East Coast especially on the Cape.

Well-Fed Oysters Resist Disease

The most recent report of New Jersey biologist, Dr. Thurlow C. Nelson, establishes a definite relationship between well-fed oysters and resistance to disease. Researchers noted that, whereas the oyster crop has thrived in periods of much rainfall, there was a pronounced drought in South Jersey in the Spring of '57—paralleling the increased oyster mortality in Delaware Bay.

Plenty of rainfall seems to guarantee presence in the water of the plant nutrients that serve as the main food supply for oysters. If a way can be found to supplement existing oyster food during periods of drought, it may increase oyster resistance to disease, Nelson believes.

Studies have also shown sharply differing susceptibilities in various stocks of oysters, according to Dr. Harold H. Haskin, professor of zoology and oyster investigation at the New Jersey Agricultural Experiment Station at Rutgers University.

Weather Hampers New Jersey Fishing

Commercial fishery activities in New Jersey during March were hampered by poor weather, but offshore dragners, however, were able to get in a number of trips during the month and landed fair catches of fluke, scup, butterfish, and increased catches of sea bass. Due to a reduction of normal operations by adverse weather, fish landings were somewhat reduced.

After an abnormal winter season, production wise; the inshore fleet at Point Pleasant has made good catches of whiting and red hake.

Trawl-line fishermen were able to get in most of their regular fishing days. Codfish catches were considered good for this time of the season, although total cod production was a bit less than the previous month.

Greenport Boat Burns, Sinks

The 12 crew members of the 80' sea-scallop boat *David A* of Greenport, N. Y. escaped when the vessel caught fire and sank 65 miles east of Cape May, N. J. The *David A*, owned by the David A. Corp. was in command of Capt. Einar Unander, who heads the corporation. The trawler was loaded with about four hundred gallons of sea scallops.

Proposed Connecticut Shellfish Center To Advance Controlled Cultivation

Congressman Giamo (Conn.) has introduced a bill authorizing appropriation of \$1,300,000 to construct a shellfish research center at Milford, Conn. adjacent to the Milford Fisheries Laboratory. Giamo said the Laboratory has found a way to cultivate shellfish under controlled conditions.

Working with limited facilities and personnel, they have managed to develop practical methods that can be expanded on a commercial basis. The bill provides facilities to work out practical cultural procedures on a pilot plant basis, which have already proven successful in the laboratory.

It would also provide facilities for further research on the factors controlling shellfish larvae survival, and would enable industry and technical personnel to learn practical techniques as they are developed. It is believed that the lab techniques, when translated into a semi-commercial basis, will be generally applicable for shellfish in all parts of the United States.



Capt. Fred Hatfield of Wakefield, R. I. with Brodeur portable emergency pump aboard his 57' dragger "Irene and Walter". Shown on deck is 2½ hp. engine which operates the pump.

Emergency Portable Pump Saves 57 Ft. Dragger from Sinking

Capt. Fred Hatfield, Westerly, R. I. and his crew of the *Irene & Walter* credited a portable emergency pump with saving their 57' dragger during a recent heavy nor'wester that threatened to swamp their vessel when the regular bilge and deck pumps were unable to cope with leaks that poured water to depths of from 2 to 2½ feet into the hold.

The vessel was dragging for flounders in a favorite fishing spot approximately 30 miles southwest of Montauk Point, Long Island. Weather conditions were poor with strong winds and heavy seas making it extremely difficult to set the trawl and tow in the direction desired. Late in the afternoon the weather grew worse, fishing gear and nets were stowed and the vessel headed inshore seeking shelter in the lee of Long Island near Shinnecock Light.

First indication of trouble came when a routine check of the fish hold, to assure that the catch of yellowtail flounders and fluke was securely stowed and iced, disclosed water, well up in the bottom of the fish pens and covering the slaughter house floor. Inspection of the fo'c's'le showed that the water had also reached dangerous heights in the fore part of the vessel. The bilge pump and the hand operated deck pump were started immediately and the vessel was slowed to jogging speed to ease the pounding from the storm that had now reached gale force.

Steady operation of both pumps at maximum speed for about 15 minutes failed to slow the steady rise of the water in the hold and fo'c's'le. Fortunately, emergency pumping equipment in the form of a Brodeur Hi-Vol pump had been installed aboard by Capt. Hatfield just a few trips earlier. The pump was quickly assembled, lashed to the after section of the main hatch, with the strainer end of the 8 foot tube deep in the flooded fish hold, and started. Within a few minutes the rapid influx of water was checked, and after 30 minutes of pumping the crew was able to enter the fish hold, locate the leaks and effect temporary repairs.

Late that evening the vessel set course for New Bedford under reduced speed, stopping about seven times to use the Brodeur pump alternating in the fo'c's'le and fish hold. Upon reaching port, the catch was unloaded and the vessel was hauled out for underwater repairs.

Advertising Promotes Lobsters

Through a series of 4-color magazine advertisements John E. Cain Co., Cambridge, Mass., is featuring a mouth-watering boiled lobster platter, together with the company's mayonnaise and other products. The Maine Sea and Shore Fisheries Department is distributing 4-color blow-ups of the ad to lobster dealers.

SOUTH ATLANTIC

Maryland Will Move Choptank Oysters to Clear Waters

The Maryland Fisheries Commission soon will transplant oysters from polluted sections of Choptank River to clearer waters, where they may be harvested. Dr. H. C. Byrd, Commission chairman, announced the move after health officials said there was no prospect of reopening the polluted areas within 2 to 3 years.

Byrd said most of the oysters probably will go into a section of the river below Hambrook Point, where no pollution is foreseen. Some of the oysters may be transplanted to the Little Choptank and others may be used as brood stock in a State seed area.

TFC officials estimate there are about 100,000 bushels of oysters under polluted waters in the Choptank. After the Commission takes 10,000 bushels as "spawners" for Holland Straits and 1,000 bushels for an oyster-growing demonstration experiment in Chincoteague Bay, the remainder will be transplanted as follows:

50 percent to public bars in the lower Choptank for use of Dorchester and Talbot County tongers; 25 percent to the Little Choptank River and LeCompte's Bay for Dorchester watermen only; and 25 percent to Church Hill and France bars off Tilghman's Island in the Choptank, for use of Talbot watermen only.

The Choptank is closed to oystering from Hambrook Point, below the bridge at Cambridge, to the Dover bridge crossing the river on Maryland 331. The section from Cambridge north to Oyster Shell Point, below Secretary, has been closed for about 30 years but contains oysters which fisheries officials say will cleanse themselves in clear water within a couple of days.

Maryland Will Not Ease Fishing License Limits

Dr. H. C. Byrd, chairman-director of the Maryland Tidewater Fisheries Commission, said he is without power to ease limits on fishing licenses which may affect relations between Maryland and Virginia.

Byrd, informed that Virginia watermen were complaining of their inability to secure licenses for the Potomac River, declared Maryland law fixes a firm ceiling on new commercial licenses.

The law prohibits an increase in the number of commercial fishing licenses until the director of tidewater fisheries determines that the crop of fin fish is sufficient to justify a greater number, Byrd said. He also cited a further stipulation in the law that new licenses, once they were authorized, could be issued only to those who had fished as their primary source of income for two years.

Any impression of discrimination against Virginia watermen was entirely wrong, Dr. Byrd declared. He said a great number of applications for new commercial licenses has been denied Marylanders. Dr. Byrd said commercial licenses could be transferred among Virginia watermen, and that applicants might step in if a license is forfeited without renewal.

Maryland Catch Value Up 47 Percent

Maryland's commercial fishermen received 47 percent more money for their landings in February 1960 than they did in February 1959. Fishermen landed 2,700,000 pounds of fish and shellfish this February at a value of \$1,300,000. This is a 5-percent increase in volume and a 47-percent increase in the value over February 1959.

Oysters accounted for the bulk of Maryland's seafood production with 1,900,000 pounds of meats. Oysters and other shellfish items made up 82-percent of the total land-



The 40' fishing craft "Eva Mae" owned by Bill Clemons of Little River, S. C., uses a Chrysler Crown 104 hp. engine turning a 19" Columbian propeller through reduction gear. Equipped with Delco batteries and RCA radiotelephone, she is finished with International paint.

ings. Rockbass and cod led the finfish catches.

Landings of fish and shellfish at Maryland ports during the first two months this year totaled 5,300,000 pounds with a value to fishermen of \$2,600,000 for an increase of 33 percent in value compared with the first two months of 1959.

Maryland To Recondition Oyster Rocks and Begin Shell Planting Operations

Scheduled to begin last month were Maryland Tidewater Fisheries Commission operations to clean moss, grass and silt from rocks in Somerset County in an effort to revitalize oyster production. Seed oysters from the Holland Straits area also will be moved to better growing areas, is reported.

In the upper part of Tangier Sound dredging operations will soon begin in an area estimated to contain 12 million bushels of old shells, which are to be transplanted in various sections of State and County waters, as part of the program to rehabilitate oyster rocks and doubling oyster production.

Many of these shell planting operations will be done with the aid of watermen, who because of their experience know where and how the shells should be planted. Four million bushels of shells are expected to be planted this year. Together with the transplanting of seed oysters, the plantings may give the Maryland oyster industry the vitality needed to place the State again in a favorable position to meet competition.

Virginia Crab, Oyster Production

Average production of crab meat through April in the Hampton Roads area was approximately 7,000 pounds daily. Crab production in the lower Northern Neck (Lancaster county) was sporadic, ranging from 400 pounds daily to 2,200 pounds. The Eastern Shore area has produced around 100 pounds daily, and on some days, 200 pounds.

The April production of oysters was somewhat low, with the Hampton Roads area producing 2,600 gallons daily, and the Lower Northern Neck from one to two thousand gallons daily. The Eastern Shore production amounted to a hundred or so gallons daily for the early part of the month.

Urges Queens Creek Improvement

Virginia's first district representative, Thomas N. Downing, speaking recently before the House Public Works Subcommittee on Appropriations urged improvements for Queens Creek for which, he said, residents of the area have long petitioned. Only 8" of water covers the creek entrance at low tide.

Downing said the area could accommodate 20 to 30 fish-

ing and oystering boats of draft to 9' and length of 60', which could produce over \$1,000,000 in seafood revenue each year. The opening of this creek would make it possible to increase the area's production of oysters, crabs and fish to \$800,000 a year.

In 1959, engineers reviewed the project and recommended favorable consideration be given improvements since they are now deemed to meet the cost-benefit requirements. Accordingly, the Public Works Committee authorized a \$12,000 survey into the various aspects of dredging in this area. At present, this sum is not included in the general fund for navigation surveys. By the engineers' recommendation, it should be.

Autotechnicon Speeds Oyster Research At Virginia's Marine Laboratory

Automation at the Virginia Fisheries Laboratory, Gloucester Point, lets scientists examine oysters twice as fast as before. A newly installed Autotechnicon mechanically processes slides of oyster tissue, leaving human technicians free to prepare more oysters for the Autotechnicon to process.

One of the most important, though time consuming problems of the Laboratory has been to discover the causes of oyster mortalities. A major break-through occurred several years ago as a result of the discovery by Dr. J. D. Andrews that *Dermocystidium* causes death during long hot dry summers.

Dr. Andrews has been able to mark out areas where *Dermocystidium* is found and to point out natural conditions which will favor its growth and cause serious losses to planters. Biologists know that other parasitic plants and animals cause epidemics among shellfish at times.

Dr. John L. Wood, head of the Microbiology-Pathology section is attempting to pin down other organisms involved in diseases of marine animals. Careful and rapid micro-techniques are essential to these studies.

Hampton Roads April Boat Landings Up

Boat landings in the Hampton Roads, Va., area in April 1960 showed an increase of 860,000 pounds over the same month of the year before. Responsible for the increase were rises in scup from 140,000 lbs. to 2,900,000 lbs., and sea bass from 390,000 lbs. to 710,000 lbs. Butterfish rose 200,000 lbs. to a total of 290,000 lbs. in April 1960, while an increase of 42,000 lbs. brought fluke up to 200,000 lbs.

The pound net fishery showed rises of 33,000 lbs. in shad, 6,800 lbs. in mixed fish, and 2,800 lbs. in catfish for April 1960 compared with April 1959. The totals showed an increase of 500,000 lbs. over the previous month.

Suggests Virginia Use Escape Clause To Combat Menhaden Imports

The State Department has told Virginia's menhaden industry to go to the United States Tariff Commission for relief it seeks from the impact of foreign imports, because the "escape clause" of the Reciprocal Trade Agreement Act is "specifically designed to deal" with situations of that sort and requires investigation outside the department's province.

The Department has rejected the industry's request for an international conference on the import question. In asking for the curbs, the industry seeks to keep imports from going above one-third of that market.

In ruling out the international talks, the Department said an international conference would be for the purpose of getting importers to reduce or at least not expand their shipments to this country.

Should the Department arrange the talks, it would in effect be deciding that the imports should be restricted. Such a determination would require investigation of the type which the Tariff Commission makes under the escape clause, and which is outside the State Department province.



Owned and operated by T. O. Hudgins of Bayboro, N. C., the 70' shrimp trawler "Miss Muse" is powered with a 6-110 General Motors Diesel turning a 52 x 40 Columbian wheel through 4.5 reduction gear. Other equipment includes Surrette batteries, Raytheon radio and Fathometer, 3-drum Hathaway hoist, Jabsco bilge pumps and Wood Freeman automatic pilot.

Shrimp Return to South Carolina Waters

Dr. G. Robert Lunz, head of the South Carolina Commercial Fisheries Division, said shrimp have returned to state waters, recently. A previous sampling of waters along the coast showed early stage brown shrimp had all but disappeared.

Lunz speculated unseasonably cold weather may have driven the shrimp beyond their usual bedding grounds, and the sudden warm weather has brought them back. Further checks are being made to determine just how wide-spread the return is in the usual shrimping waters south of Charleston.

Oyster Sanitary Tests Good in Horry, Georgetown Counties

Excellent results were reported for a sanitary survey of all oyster plants and growing areas in Horry and Georgetown Counties, S. C., completed recently by Hart B. Hiers, engineering division State Board of Health, and Clinton B. Chestnut, Horry County Health Dept.

The water in which oysters are grown was tested for bacteriological control, and the oysters were tested in the shell and in processing plants.

Samples were run daily for 6 weeks and showed extremely low bacteria counts. Approval of these plants by federal, state and county health departments means that all plants may ship or sell oysters in any of the fifty states or Canada. This will result in many thousands of dollars income for plant operators and all personnel involved in the oyster industry.

Commercial Canaveral Scallop Deposits

Commercial-sized scallops were taken recently by the exploratory vessel, *Silver Bay*, 20-30 fathoms east of Cape Canaveral, Fla., and are considered sufficient encouragement for commercial scale fishing in the area.

Eighteen tows were made with an 8' scallop dredge in spite of heavy seas. Catches ran as high as 10 bushels of mixed shell and live scallops during a 15-minute tow.

A MATTER OF FACT ABOUT ACRONIZE

To prevent misunderstanding about the position of Acronize® chlortetracycline under the new food additive regulations, the following is an open letter to the poultry and fishing industries.

CYANAMID

AMERICAN CYANAMID COMPANY
AGRICULTURAL DIVISION
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Dear Sir:

In response to inquiries which we have received concerning the status of Acronize chlortetracycline, we feel that the following information will be of interest to you.

Section 408 (the Miller Amendment) of the Food, Drug and Cosmetic Act deals with the use of chemicals on raw agricultural products and when so used Acronize chlortetracycline comes under that Section. In order to obtain clearance under this Amendment a chemical receives a certificate of usefulness from the Secretary of Agriculture that the product will have the utility claimed for it. The Department of Agriculture must also give an opinion to the Food and Drug Administration as to whether the proposed tolerance or exemption reasonably reflects the amount of residue likely to remain when used in the proposed manner. The Food and Drug Administration must clear the chemical from the standpoint of safety for the proposed uses. Acronize was cleared for use on poultry on November 30, 1955 under the procedures as stated above.

On April 21, 1959 a second clearance for Acronize was granted by the Food and Drug Administration under the Miller Amendment for its use on whole, headed or gutted fish, unpeeled shrimp and shucked scallops. The same procedures were required for this clearance.

CYANAMID

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For a number of years American Cyanamid Company has been cooperating with the Food and Drug Administration, the Department of Agriculture and the Department of Interior in order to establish the utility and safety of Acronize when applied to raw agricultural commodities and foods. Extensive animal toxicity studies and extensive clinical studies on humans show that the product is completely safe for approved uses. There has probably been no food additive which has undergone such rigorous testing.

Currently we have a petition pending with the Food and Drug Administration under the new Food Additive Amendment (Section 409) of the Food, Drug and Cosmetic Act which relates primarily to processed foods. Our petition deals with the application of Acronize chlortetracycline on processed fish such as fillets, fish steaks and peeled shrimp. A part of this petition includes the results of continuous feeding of Acronize chlortetracycline to rats for a two-year period and dogs for a one-year period at levels considerably higher than would ever be found in foods. Since we feel that these studies show conclusively that Acronize chlortetracycline is safe for such uses, we hope to have the necessary approval before long.

We trust this information will reassure you that you are using a safe product when you place Acronize chlortetracycline on poultry or other commodities for which its use has been approved, and within the approved limits. If you have any further questions, please do not hesitate to let us know.

FOOD INDUSTRY DEPARTMENT

®ACRONIZE and ®ACRONIZED are registered trademarks for American Cyanamid Company's chlortetracycline.



GULF OF MEXICO

Major Oyster Production Returns To Jackson County

Jackson County, Miss., is back in major oyster production for the first time in more than 20 years. More than 100 tonging boats recently were reported harvesting an estimated 2,000 barrels daily from a reef off Middle River, east of Gautier.

More than half are operated by counties, according to seafood inspector Claude A. Moody, Pascagoula. Others are from Biloxi and Bayou la Batre, Ala. Nine freight boats are transporting the harvest to canning plants at Biloxi.

During a recent inspection trip, Elmer Gautier, seafood commission secretary, and Moody counted 108 boats at work over the reef. The oysters bring \$2.50 a barrel, which means \$5000 a day is being paid fishermen engaged in the tonging.

The present harvest is of the small or canning-type oyster, Gautier said. This is because the reef has not been worked for such a long period of time that oysters have multiplied to a point where there is not room for natural growth. Thinning of the reef resulting from the tonging underway will be beneficial and should result in raw stock harvest next season, he added.

Gulf Shrimp, Finfish Landings Rise

Landings of heads-off shrimp at Gulf coast ports during the first three months of 1960 totaled 11.4 million pounds, compared with 10.2 million during the same period of 1959. Oyster landings were 325,000 barrels. Edible finfish, including both fresh and salt water varieties, totaled 2.3 million pounds, for the best first-quarter production since 1955. Blue crab production remained stationary at 1,168,000 pounds.

New Seafood Commission Checks Dredging Methods

The newly organized Mississippi Marine Conservation Commission received a transfer of property from the defunct Mississippi Seafood Commission and immediately took action to prohibit damage of oyster reefs allegedly caused by hydraulic dredging.

Chairman William G. Simpson asked Biologist William Demoran and Commissioners Mike Sekul and Charles Weems to check, with one of the officials in charge of dredging in Biloxi Bay, into the possibility of damage. Simpson pointed out that it wasn't the Commission's intention to curtail dredging, but to stop oyster damage caused by the method of discharging spoil.

Members of the abolished commission stated that the group agreed to allow dredging before their unit was abolished. The agreement was made when the J. B. Michael Construction Company, Inc. asked permission to dredge in connection with the building of a bridge. The old members stated that the dredging was to be carried on with a dipper-type dredge, but not with a hydraulic dredge.

Demoran said he didn't think the spoil was getting on the reef, but the method of discharging spoil will change currents in the bay. He was asked to check dredging in the Pascagoula area, and report to the Commission as soon as possible.

The Commission instructed chief inspector, Clarence Canaan, to put inspectors in the Pascagoula area to enforce culling laws. The oysters reported coming from the area contained many shells and uncultured oysters.

A committee was appointed by Simpson to make advanced study of old commission laws and report the find-

ings at the next meeting. Members of the advisory council to the new Commission will also be named at the next meeting, it was announced.

Those appointed to the new commission by Governor Barnett include: William G. Simpson Jr., Gulfport seafood canner; Charles E. Weems, Biloxi canned oyster dealer; George Brumfield, Moss Point menhaden industry executive; Henry Hultz, Pascagoula shrimp dealer; Mayor Champ Gay of Ocean Springs; Joseph V. Colson, Wave-land seafood packer; Lloyd L. Ladnier, Bay St. Louis fisherman; and L. Alden Maufray, Bay St. Louis marine supplier.

Alabama Shrimp Rules Clarified

Alabama Seafood Division officials have issued a clarifying statement on a recent change in seafood regulations pertaining to shrimping in Alabama waters. The regulation states that it is illegal for one boat to use more than one net, trawl, or seine for catching shrimp in state waters.

George Allen, chief of the Seafood Division, said the change will affect only shrimpers in the inside waters of the state. The outside, or Gulf waters of Alabama, will not be affected by the limitation of trawls or seines.

Nueces Bay Possible Shrimp Boat Basin

The Navigation District and the city of Corpus Christi, Tex., are continuing to study possible sites for a shrimp boat basin at the Port, with the most likely location to date on Nueces Bay west of the causeway. However, it first would be necessary to have a pass at the railroad channel crossing.

The basin would be an attempt to bring shrimping back to Corpus Christi. One major consideration is locating a site large enough for future expansion to accommodate industries allied with the shrimping business.

Although it appears the location west of the Nueces Bay Causeway on Nueces Bay would be most desirable, it will be considered as a future, rather than a present possibility, because there is no access from Nueces Bay to the main harbor.

The location of an entrance channel is undetermined because of a decision last year to not remove the railroad trestle crossing the bay, a project on which the State Highway Department had predicated its plans for a new causeway.

Corpus Christi Considers Shrimp Farming

The Corpus Christi, Tex., Chamber of Commerce navigation committee voted recently to investigate the practicability of "farming" shrimp and seafoods in the Gulf of Mexico. Fred Alford and Ralph Valls were named at the meeting to continue the study and to make recommendations in about two months.

Alford also was named chairman of the committee to investigate aquaculture, or water farming, in coastal waters. Others appointed to the committee were Monroe Williamson and S. S. Borling.

The committee also voted to work with the Navigation District and the Corps of Engineers to expedite the improvement of port facilities, in addition, to looking into possible recommendations for improving harbor and navigational services and facilities.

Six Texas Boats Lost

Texas boat losses from fire and weather during recent weeks included the *Little Texas* and *Gulf Stream* from Freeport; the *Gail D* out of Port Isabel; the *D&G, Margo*, and *Panna Maria* from Galveston. With the exception of the captain aboard the *Gulf Stream*, who remained on deck in a vain attempt to save his vessel, no loss of life was reported.

GREAT LAKES

Michigan Fishermen Request Use of Otter Trawl

Commercial fishermen have appealed to the Michigan Conservation Commission in Lansing for regulations permitting the use of otter trawls. They told the commission changes would strengthen businesses and improve competition with other Great Lakes operators.

William F. Carbine, regional director of the Bureau of Commercial Fisheries, U. S. Fish and Wildlife Service, said present gill net equipment is outmoded, being designed for catching fish now scarce—lake trout and lake whitefish.

Carbine said there is good potential in the lakes for commercial fishermen and although trawling is expensive, it is the best way to bolster the industry. He assured the commission that trawling would not deplete game fish as it allows selective fishing.

Dr. James W. Moffet, Fish and Wildlife Service lamprey control program head, said the lamprey is wasting the deepwater chub populations which should be taken by commercial fishermen. Moffet said no biological reason exists for protecting these populations.

He said trawls provide fresher material, steadier supplies, and quicker processing than the conventional gill net. Other Great Lakes trawl operators find ready markets for small chubs and trash fish with dog and cat food and fertilizer producers.

Roy Jansen, president of the Michigan Fish Producers association, asked for other fishing regulation changes, such as reducing chub net, mesh sizes one-sixteenth of an inch, and recommending a lower size limit in a triangular area of Green Bay to match Wisconsin's 8" minimum.

He also requested revising the yellow pickerel season in Saginaw Bay to conform with that in Lake Huron; switching the closed whitefish season to Nov. 1-Dec. 10; extending the whitefish trap net area in Lake Huron.

In addition Jansen suggested removing the closed season on calico bass, and matching the sports and commercial fishing seasons in Lake Michigan.

Wisconsin Considers Commercial Fishing Regulation Changes

The Wisconsin Conservation Commission has asked residents of the counties bordering Lake Superior to express their opinions on the question of returning walleyes in all waters of the lake except bounded bays and reserves to the commercial list.

A petition from residents of Douglas County asked that the walleye be returned to the commercial list in waters bordering the county. The petition said that removal of walleyes from the list had not improved sport fishing for this species but had denied commercial fishermen an opportunity to harvest an available population and denied the public an opportunity to purchase the fish for food.

This and other questions concerning proposed changes in state fish and game regulations were to be considered at public hearings throughout the state this month.

Several other proposals affecting commercial fishermen include the Conservation Commission proposal to relax restrictions on commercial fishing in certain waters in and bordering La Crosse County, including the Mississippi River, on grounds that such relaxations would permit better harvest of commercial fish with no detrimental effect on other fish.

Another proposed change would make it unlawful to take, catch or kill fish held in any fish net, fish holding net, fish trap, fish pond, or any other structure placed in state waters under commission authority to take or hold fish. Purpose of this change would be to prevent the molestation of fishing gear of state and commercial fishermen.

Also to be considered was a commission recommenda-



The shrimp boat "Suzanne G" is owned by Manuel A. Sanchez, Jr., of Brownsville, Tex., and is powered by a D88 Caterpillar engine rated at 100 hp. and 3:1 Twin Disc reduction gear. She has a Ritchie compass, Raytheon depth sounder, Nycot nets, Stroudsburg T515½ hoist.

Fishermen Donate Buoys

The most recent action in the close-in shrimping ban on commercial trawlers at Corpus Christi, Tex., was a \$600 donation by the Fisherman's Association for the purchase and installation of 10 buoys to mark the boundary 2,500' from the shoreline, inside which shrimping is now prohibited.

Scholarships for Marine Summer Studies at Aransas Pass School

Scholarships are available for graduate students who attend marine summer school at Port Aransas, Tex., this year. The summer term begins June 13 and closes August 15. "Principles of Marine Science" and "Research Problems in Marine Science" are the courses offered, totaling nine hours of credit.

A \$4,000 grant for this purpose was made by the National Science Foundation to the Institute of Marine Science. Eight awards of \$300 plus \$80 for each dependent and a travel allowance of 8¢ a mile from Port Aransas will be given the students.

Texas Waterway Projects in Budget

Included in President Eisenhower's budget requests for district waterworks projects for the 1961 fiscal year, are \$2,000,000 for a waterway improvement at Corpus Christi, Tex., and \$833,000 for the first section for widening the Port Aransas-Corpus Christi Channel.

Morgan City Combines Shrimp Fete With 100th Birthday Celebration

According to Lee Vaccari, general chairman of the Morgan City, La., Centennial Celebration, the executive committee has decided to combine the 100th birthday program with the Blessing of the Fleet and Shrimp Festival so that the port will not risk losing its identity as the home of this famous fete each Labor Day week end.

Tentative plans call for beginning the observance with an All Faiths Day Sunday, Aug. 27, and a daily program of Centennial events through Labor Day with the Blessing of the Fleet and the Regatta on Labor Day as principal program features the last two days.

Seafood Booklet Shows Biloxi Blessing

Two pages of pictures of the Blessing of the Shrimp Fleet at Biloxi have been included in the Fisheries Marketing Bulletin, put out by the Bureau of Commercial Fisheries as part of its consumer education program.



Capt. Louis Gamlin of Marinette, Wisconsin, owns a 32' gill net tug.

tion that any live box, crib or similar device used for the keeping of fish on Wisconsin's inland waters must have a metal tag attached bearing the name and address of the owner or user.

The commission pointed out that identification of such live boxes is necessary to create some responsibility for the owner, because some such devices have been permitted to remain in the water when empty and have become a nuisance.

Begin 1960 Trout Plantings

A planting of 92,000 yearling lake trout near Fox, Trout, and South Fox islands in northern Lake Michigan early this month opened the 1960 phase of a 10-year program to

re-establish this fish in the upper Great Lakes.

Plans call for 1,260,000 yearling and fingerling lake trout to be planted in Lakes Michigan and Superior this year. Of that number, 580,000 will come from federal hatcheries in Michigan; Ontario will stock 470,600, and the remaining 210,000 will come from Wisconsin.

The lake trout rehabilitation program was launched in 1959, when some 800,000 fish were released. The international Great Lakes Fishery Commission has set an annual planting goal of seven million yearling lake trout in Lakes Michigan, Huron, and Superior, where the species has been virtually exterminated by the sea lamprey.

Yearling lake trout, five to six inches in length, are immune to the lamprey attacks and by the time the released fish reach the vulnerable age, it is expected that the predator will be under control in the Great Lakes. All planted fish will be marked with fin clips for identification purposes.

Restocking Program Will Get Two Million Trout Yearly from New Hatchery

Construction of a \$893,000 lake trout hatchery in Antrim County, Michigan, has been approved by the Conservation Commission and the federal government has been granted a public use deed for 110 acres. However, Congress must still approve funds for construction of the hatchery.

The new Fish and Wildlife Service hatchery will produce an estimated two million lake trout a year for restocking the upper Great Lakes, where the fish have been reduced by the sea lamprey. Present hatchery facilities of Great Lakes states and provinces co-operating in the restoration program can produce about five million lake trout a year.

Diesel Engine Maintenance

(Continued from page 10)

ciated with smoky exhaust and oil dilution. Underfueling decreases horsepower output.

Proper fuel combustion depends upon air supply as well as fuel. When air supply is restricted, the engine loses horsepower; the exhaust will be smoky, and some of the unburned fuel will get by the piston rings and dilute lubricating oil.

Control Operating Temperatures

Combustion temperatures are high enough to melt the engine, and complete failure of the cooling system will ruin the engine within a few minutes. Nobody purposely operates an engine without water but many engines are being damaged slowly each day by cooling systems that are only 50% to 75% efficient. Engine coolant temperatures should be maintained at 160°F to 190°F.

This ideal narrow temperature range for all operating conditions requires that every part of the cooling system be maintained in top condition.

The cooling system must do its best job under the most adverse conditions. As ambient temperatures or engine loads increase, the coolant temperature rises. At the same time, it is expected to do more cooling.

When coolant temperature is below 160°F., fuel may not burn readily or produce its full power. When water temperature exceeds 190°F. and the engine is operating under full load, lubricating oil may get so hot and thin that it cannot lubricate effectively.

Every part of the cooling system requires attention. Water jackets lose ability to absorb heat when they become coated with scale, rust or dirt. Water pumps circulate less coolant as impellers wear, or as belts slip. Thermostats wear out and fail to control water flow accurately after long periods of service. As radiators and oil coolers get dirty (inside and outside) they lose ability to absorb and radiate heat. Water hose, gaskets and piping may develop leaks.

Guard Against Corrosion

Many engine owners have been shocked to find water in the crankcase and to learn that it got there through "pin holes" or "worm holes" that started on the water side of the cylinder liners. Often the damage progresses to the point that all cylinder liners and the cylinder block have to be replaced.

Such "eating away of metal" or corrosion, as it is properly called, is likely to occur in any heating or cooling system where the coolant is not treated to prevent the action. Corrosion may or may not be associated with iron rust; as an example, severe corrosion may take place in a system that is protected against rust. Research has shown that there are many causes of corrosion and that among the most serious are acid, salt or air in the coolant.

Rust and scale decrease the efficiency of the cooling system by retarding conduction and radiation of heat and flow of the coolant. Rust acts as an insulator against heat conduction, and pockets in the system get clogged with rust or scale deposits. Cracked cylinder heads are common results of poor cooling. The same maintenance that prevents corrosion will prevent rusting.

A Diesel engine requires about 12,500 gallons of air for every gallon of fuel that it burns. For the engine to operate efficiently, the air system must meet the following requirements: The engine must breathe freely; the intake and exhaust must not be restricted; and valves, pistons and rings must seal properly against compression and combustion pressures.

The amount of fuel which can be burned and the power developed is as dependent upon air as upon fuel supply. If there is too little air to burn all the fuel, some of the excess fuel will cause a smoky exhaust—a sign of wasted dollars and lost horsepower.

Unfortunately, wasted fuel is not the only loss caused by incomplete combustion. The excess fuel washes lubricating oil off cylinder walls resulting in seized pistons and bearing failures. Carboned injector cup spray holes and stuck piston rings are other troubles which result

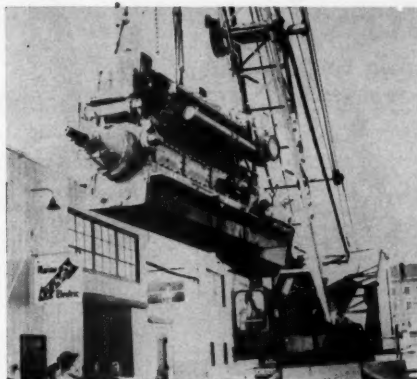
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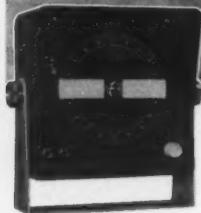
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Warranty of
at least 50%
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Operation from boat's battery adds extra power, permits use of synchronous AC motor for constant scanning speed.

MS-660 exclusively features: *Intensity switch* for added flash brilliance under bright viewing conditions — *Pulse control* to change pulse width for better response on certain bottom conditions. Unit has two, extra-large dial scales—is calibrated 0-600 feet and 0-100 fathoms, tilts on gimbal mount for best visibility. High power transducer is durable cast bronze, mounts on keel of boat, uses new kind of packing gland for positive water-tight seal.

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from insufficient air. Dirty air cleaner elements, leaky valves, worn rings, damaged mufflers, and air piping that is too small or with sharp bends are common causes of air restriction.

Prevent Overspeeding

Engines must not be operated beyond the maximum rated rpm. for which they were designed. Some Diesels are protected against overspeeding during normal operation by governors which are correctly adjusted when they leave the factory. Increasing rpm. by changing governor weights to attain speed beyond the normally rated rpm. of the engine could lead to engine damage.

Turbocharger rpm. depends upon exhaust temperature and air density. Over-fueling will cause turbocharger overspeeding and failure. The reasons for failure from overspeeding are due to centrifugal force and inertia.

In any rotating piece of machinery, the mass tends to fly away from the center of rotation, (centrifugal force) creating an unbalanced load which, increases in proportion to the squares of the rotating speeds. For example, centrifugal force, or pull of unbalanced load, of 100 pounds at 1000 rpm. increases to 400 pounds at 2000 rpm., or 900 pounds at 3000 rpm., etc. Any unbalanced load increases in the same proportion.

Know the Engine's Condition

The engine is constantly giving signs of its condition for the operator or the maintenance mechanic to interpret. In many cases, the operator is the first to detect signs of trouble. Unless he reports these conditions to the maintenance department, the faulty conditions may be missed until after real trouble develops.

Interpretation of the signs is a very important part of maintenance. As an example, from low indicated oil pressure it must be determined which of the following conditions need correction: faulty gauge, low oil level, diluted lubricating oil, worn bearings, or bearing failure.

It never pays to run an engine until it fails, because one part failure usually ruins other good parts. Some examples of approaching severe failures are: bearing metal in the lube oil filter which if not found and corrected at the source may cause the loss of a crankshaft; excessive crankcase pressure, or blowby, which indicates conditions that may lead to a stuck piston, broken rod and ruined cylinder block; and leaks in the intake air system which may permit entrance of enough dirt to wear out the engine within a few hours.

An engine is made of many parts, each closely related to many others. Each part has its own function and failure to perform that function places additional strain on other parts. As overloaded parts fail, they add to the overload on still others until by progressive failures the engine will be put out of commission.

Preventive maintenance is a series of simple checking, replacement, and repair operations intended to forestall progressive damage. Delaying a maintenance job that needs to be done is a reckless gamble. Very few engine failures occur which are not preceded by warning signs that can be detected.

The objective of preventive maintenance is to correct unfavorable conditions that develop during engine usage before they get serious enough to cause damage. The value of the program is dependent upon meeting the time requirements by adherence to a well-planned schedule.

Preventive maintenance performed on schedule is the easiest as well as the least expensive type of maintenance. It requires less work and material to prevent failures than to fix them. Maintenance must not be relegated to a position of secondary importance for the sake of a temporary increase in production.

A small amount of paper work is necessary to control the program. Check sheets are needed to detail the jobs to be done and as a record of what was done. A schedule board is necessary to make best use of time. Summary sheets listing labor and materials are important to control costs. It is important to remember that paper work is useful only as it reduces work load instead of contributing to it; it needs to be as simple as possible to maintain its effectiveness.

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Plastic Sheeting Supports Oysters on Soft Bottoms

The problem of oyster setting on soft, muddy bottoms appears to be solved by covering the grounds with a thin sheet of plastic material to serve as a support for oyster shells, other set collectors, seed oysters, or spawners according to Dr. V. L. Loosanoff director biological laboratory Bureau of Commercial Fisheries, Milford, Conn. Some plastics are neutral, virtually indestructible materials which last many years. Polyethylene has been used in experiments and proven extremely durable. It is comparatively inexpensive—sheets costing less than one cent per square foot if purchased in large quantities.

Many bottom areas and estuarine regions are too soft to support oysters or their shells. To convert these areas into oyster beds thousands of bushels of oyster shells have to be planted on each acre to harden the bottom. This is an expensive undertaking, rendering the method virtually impractical. Nevertheless, problems of this nature have to be met in extensive areas along our coast when establishment of oyster beds is desirable in regions where the bottoms are too soft.

Recently an experiment was undertaken on the mud flats in Milford Harbor where a polyethylene sheet (6 mils thick and 20 feet wide) was spread on the bottom in such a manner that half of it was above and half below the mean low-water mark. Large quantities of oyster shells, loose and in special chicken-wire bags, were

placed on the polyethylene. An extremely heavy set of oysters occurred on the shells resting on the plastic. Corroborating earlier laboratory observations showing the lack of adverse effects of polyethylene on oyster larvae and set.

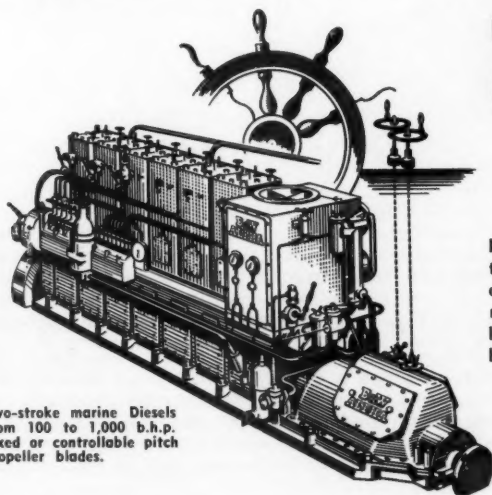
Continued observations indicated that the polyethylene sheet withstood seasonal changes very well and that even a severe winter, when the tidal flats froze frequently and large quantities of ice were formed in Milford Harbor, did not noticeably affect the plastic material. A year after the sheet was first placed in the water, the plastic showed no signs of deterioration and continued to support the heavy load of shells and oysters.

In addition to converting soft bottoms into usable ones, polyethylene sheeting can be used for still another purpose. For example, a gradual deterioration of good oyster bottoms after being used for some time has been ascribed to the accumulation of molluscan waste products which gradually decompose, rendering the bottom toxic to oysters. Such areas could probably be restored to their former productivity by covering them with polyethylene sheeting or similar material, which would isolate oysters from the deleterious effects of polluted bottoms.

Still other uses of polyethylene sheeting suggest themselves. One, perhaps, is that of creating favorable conditions in specially-designed ponds and tanks for the cultivation of commercial species of sponges. The material can also be used for protecting the bottom of oyster dikes and claires (small enclosed oyster ponds) from burrowing crustaceans, and also for retaining the water in claires, built in areas where natural soil is too porous.

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B&W ALPHA Diesels carry their own built-in maintenance; just a routine trip down to check fuel and lubrication, and the rest of the time every man on board can be usefully employed in the business of getting there, making the catch, and getting home again. Install a B&W ALPHA Diesel this time . . . and get more time for the business of making money.

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EQUIPMENT and SUPPLY NEWS

Morris Named Columbian Rope President

Rexford L. Morris has been elected as president of Columbian Rope Co., manufacturers of natural and synthetic fiber cordage at Auburn, N. Y. He replaces Edwin R. Metcalf, who became vice-chairman of the board. Morris was formerly executive vice-president, a post now held by Frank R. Metcalf who moved from the position of vice president, purchasing.

Morris has been with the company since 1917, working up from the engineering and financial department. He has been a company officer for over 20 years. He was named production manager in 1923 and, later, company auditor and office manager. Appointed as a director in 1937, Morris was later elected vice-president, then vice-president and treasurer.

Edwin R. Metcalf has been president of the company for eight years and of the subsidiary Pennsylvania corporation, the Edwin H. Fittler Co., for 11 years.

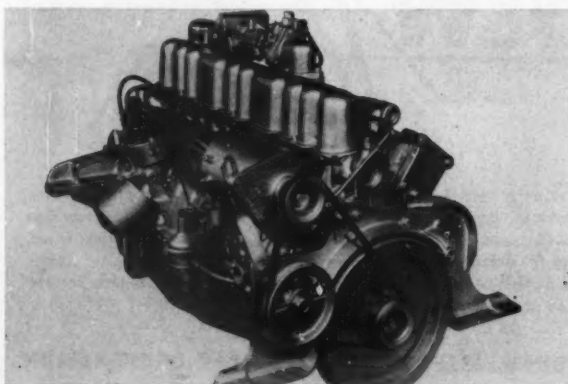
Dearborn Has New 6-Cylinder Engine

The small, lightweight Golden Interceptor, a 6-cylinder, in-line, 85 hp., marine inboard engine, equipped with Paragon Marine Gear, is the latest development of Dearborn Marine Engines, Inc., 31465 Stephenson Highway, Madison Heights, Mich. Maximum use has been made of aluminum alloys, to save weight. Engine displacement is 144 cubic inches. Bore is 3.50, stroke, 2.50. The compression ratio is 8.7:1. Manifolding incorporates the flow and counter-flow system for cool, quiet operation.

The fuel system, with fully automatic choke, has a horizontal-type carburetor. The fuel pump is full-flow, high capacity, with pulsator. The oil filter has a full-flow throwaway element, changeable by hand. Self-priming, the water pump is belt-driven, with positive displacement.

The 12-volt electrical system and the enclosed 15-ampere generator is belt-driven, with automatic voltage regulator. Fully enclosed, the solenoid-operated starter has an anti-kickout drive. Positive engagement is achieved electromagnetically. Planetary-type gear positions are accurately indexed for positions, with forward in direct ratio.

The largest engine in the Interceptor line is a 275 hp., 430 cu. in. V-8 designed for heavy duty operation. Other 8-cylinder, 90° V type, overhead valve models are rated at 135, 170, 185, 215 and 240 hp., and all are of light weight, compact design, with simplified, easily accessible components.



Light-weight, 6-cylinder Golden Interceptor made by Dearborn Marine Engines produces 85 hp. at 4,000 rpm.

Luther H. Blount with his mechanical, shaft actuated, controllable pitch propeller which changes from full ahead to full astern in 2½ seconds. The 29-inch prototype developed higher thrust values during tests than stock 30-inch fixed-blade wheel.



Blount Controllable Pitch Propeller

Development, manufacture, and sale of an all-mechanical, shaft-actuated, controllable pitch propeller by Hustad Marine Corp., 459 Water St., Warren, R. I., has been announced by Luther H. Blount, inventor, who is president of Blount Marine Corp.

Pitch changes are made with a control lever which may be mounted next to the engine throttle control, and may be operated by hand, or assisted by pneumatic or hydraulic servo units. Moving the lever causes two geared brake units to actuate a push-pull rod inside the hollow, rotating propeller shaft. The rod in turn actuates mechanical linkage that changes the pitch of all three blades simultaneously.

The geared brake units are inboard and contained in a cylindrical housing 2½ times the shaft diameter and 12 inches long. The shaft, flanged at the outboard end, is only slightly larger than normal, solid shafts turning fixed-blade propellers of comparable size.

Pitch settings are virtually infinite and are protected against creep by built-in positive-locking features. Loads on the shaft control rod are less than 50 lbs. at maximum speed and thrust. Pitch setting registers directly on a dial mounted on the control console which is activated by a simple cable device connected to the propeller unit.

Blades are mounted in sealed heavy duty bearings extending through the solid hub and are locked in place by threaded stops in an exterior recess on the opposite side of the hub. They may readily be loosened by a wrench. No water can seep into the hub as it is permanently sealed, permitting underwater blade changes.

A 29", 3-blade prototype of the new propeller has developed higher thrust values than a stock 30" fixed-blade wheel. It has demonstrated high pitching speed, changing from full ahead to full astern in 2½ seconds.

Although it may be built to any size, the Blount propeller will be available at first only in diameters between 30 and 60 inches, using bronze or stainless steel.

New Tar Resistant Flexso Net-Needles

New, Flexso, plastic net-needles, developed by J. H. Shepherd Son & Co., 1820 E. Avenue, Elyria, Ohio, are designed to resist damage by tar when repairing nets. Tar can be removed easily with gasoline. These new tar-resistant needles possess the same advantages of flexibility and ease-of-use as the former type of needles. They are available in 12 different sizes.

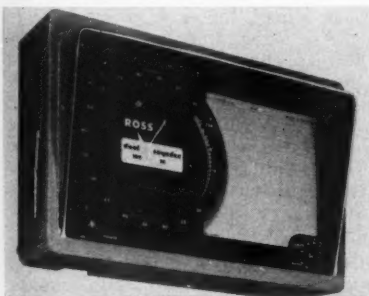
New England Marine Expands Facilities For Penta and Interceptor Engines

New England Marine Corp., 1 Industrial Way, Riverside, R. I., is expanding its engine sales and service facilities with the construction of a 60 x 35 addition for show room and shipping use. The firm recently was appointed New England distributor for Volvo-Penta marine engines. It also distributes the Deaborn Interceptor engine line, and has an 80 x 60 engine warehouse.

An outgrowth of Crafford Tool & Die Co., whose machine shop facilities it utilizes, New England Marine is staffed by Arthur Hartwell as president; Howard Crafford, vice president, Thomas Crafford, treasurer and Harlan Batchelder as service engineer and sales representative. The Company already has appointed several dealers, but still has some openings in Maine and New Hampshire areas.

Parts and accessories for Volvo-Penta and Interceptor engines are carried in stock for 24-hour service to any point in New England. The Interceptor line includes V-8 engines from 135 to 275 hp. and a new 6-cylinder 85 hp. model. Volvo-Penta engines are made in 8 to 185 hp. Diesels and 5 to 85 hp. gasoline models, and include the Bolinders Diesel for propulsion and generator use. The Company is distributor of Michigan propellers and handles the Powerwinch anchor windlass.

New England Marine also has a complete electronic line of radios, telephones, radar, depth sounders and fish finders. They are dealers for Pearce-Simpson, RCA, Raytheon, Bendix, Sonar and Ray Jefferson.



Ross Laboratories new Dual Sounder combines flasher and recorder in one instrument. Flasher has 100-fathom range, sounder has 25-fathom shallow range.

Ross Sounder Combines Flasher, Recorder

Ross Laboratories, Inc., 124 Lakeside Ave., Seattle 22, Wash., has developed a new Dual Sounder, which combines flasher and recorder in one package. Compact, the flasher has a 100-fathom basic range for deep water soundings, while the recorder features a shallow 25-fathom range, expandable to 100 fathoms.

Designed for shallow and midwater fishing, the recorder reads in 4 steps across 7" wide, non-aging paper: 0-25, 25-50, 50-75, and 75-100 fathoms. This provides nearly 1/4 in. of graph for each 6 ft. of depth to deliver sharp detail in shallow waters or when recording fish and bottom contours a full 100 fathoms down.

The Dual Sounder uses a Single recorder-flasher arm. One motor turns the flasher, marks the recording paper, and drives the recording paper. Using the circular sweep principal of other Ross Recorders, the neon bulb is attached to the recorder arm so that one arm functions as both recorder and flasher.

The Ross magnetic keying system was adapted to the Dual Sounder to eliminate contact wear, corrosion problems, and tension adjustments.

The Dual Recorder is designed to allow the operator to use the flasher for normal cruising—and to switch to the recorder when he wants to chart the bottom or to obtain fine bottom or fish detail. The recorder's proper range can be selected without switching from one range to another. By noting the depth on the flasher, the operator may switch to the corresponding range on the recorder.



B. D. Fish



P. G. Clarke

Lister-Blackstone Makes Promotions

During his recent visit to the United States, Sir Percy Lister, Chairman of the Lister group of companies, announced the promotion in Lister-Blackstone, Inc. of B. D. Fish to the position of Director and General Manager, and P. G. Clarke to Sales Manager.

Lister-Blackstone, Inc. was incorporated in the state of Wisconsin in 1939 and Fish has been with the organization since 1942. Clarke started with the parent company in England in 1946 and has been on the sales staff of the American organization since 1957. Both men have contributed largely to the expansion of the company's line of air-cooled engines.

New Engine Plant for Allis-Chalmers

Construction of a new multi-million dollar engine manufacturing plant has been announced for the Harvey (Ill.) Works of the Allis-Chalmers Manufacturing Co., Milwaukee, Wis. The new building will provide an additional 515,000 sq. ft. of manufacturing area for the Harvey Works where a broad line of power units will be produced for marine purposes. An engineering and development research laboratory has already been built and is in operation.

Drifting Plastic Boat Survives Hurricanes

A Fiberglass-reinforced plastic striker boat, adrift in the Atlantic Ocean for more than 14 months and subjected to the pounding of 3 hurricanes last year, was discovered unharmed last month by a U. S. Coast Guardsman.

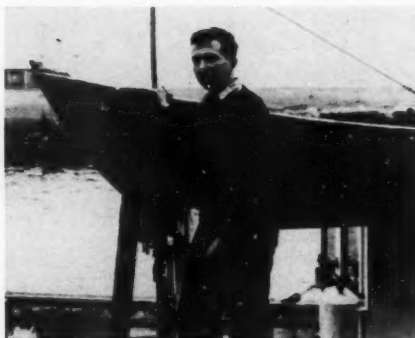
The 12' round bottom tender, built by Carolina Fiberglass Products Co., 510 E. Jones St., Wilson, N. C., was lost by her mother ship December 8, 1958, off the North Carolina coast during purse seining operations. She was found afloat off the coast of Bermuda, more than 600 miles away.

Owned by Wallace Fisheries Co., the striker boat had Styrofoam floatation in its air compartments for added safety. One third of its bottom was found to be covered with barnacles, small crabs, and sea worms, and the inside was coated with grass and slime. However neither the barnacles nor worms had managed to do any harm.



Fiberglass-reinforced, plastic striker boat, adrift for 14 months survived 3 hurricanes, was found unharmed 600 miles from where it was lost.

Here is
Capt. Fred Hatfield
and the BRODEUR
HI-VOL PUMP
that Saved his
57-Foot Dragger
"Irene & Walter"



While fishing off Long Island this winter in gale force winds, the "Irene & Walter" suddenly started taking water. The regular bilge and deck pumps failed to cope with the leaking water which was 2½ ft. deep in the hold. Capt. Hatfield of Westerly, R. I. put his emergency Brodeur Hi-Vol portable pump in operation, and in 30 minutes the crew was able to enter the hold and make temporary repairs. The dragger reached home port safely with her catch of flounders.

BRODEUR HI-CAPACITY Portable Prop-Lift-Pump

Up to 400 gals. per minute — Simple, Trouble-free design

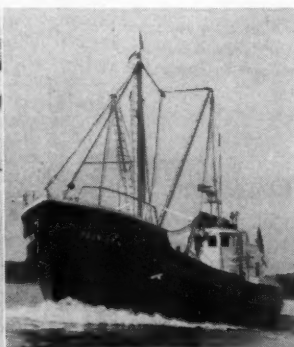
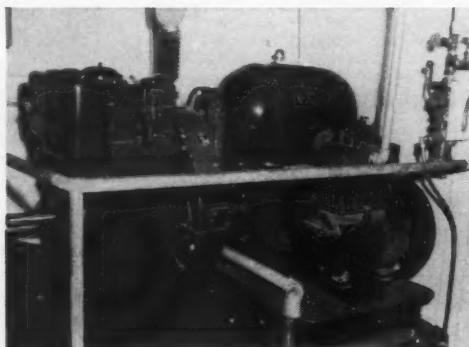
Lightweight — Easy to use — Economical operation

Made in 6 sizes for 4 to 14 ft. lifts. Engine is demountable and has handy 12 lb. carrying case. 2¾ hp. Briggs & Stratton engine. Weight of pumps 34 to 64 lbs. Weight of motor 30 lbs.

Write for complete information

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62 Wood Street
 New Bedford, Mass.



"In my boats, I go for

Lister's

—TROUBLE-FREE MONEY SAVERS"

New 80 ft. scallop dragger "Prowler", New Bedford, is the pride of Capt. Arthur J. Pedersen. He knows Lister Diesels, likes them, says so.

Prowler is Capt. Pedersen's second Lister-equipped boat. Her air cooled 2 cyl. 8½ HP Lister SL2 economically powers a 5KW 115/140 volt Kurz & Root generator, Model 30 Quincy air-compressor and 1-¼" Jabsco 823 pump. The 70 ft. Pedersen scalloper "Snoopy", launched 1957, is Lister auxiliary-powered too—her

water cooled Model FR-1 also drives a Kurz & Root generator, Quincy compressor and Jabsco pump. Instant starting, trouble-free, long-life Lister's, AIR-COOLED or WATER-COOLED, are fishermen's famous economy favorites. Write us for data. Give us your requirements.

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Trawler "Maris Stella"

(Continued from page 9)

valves to regulate; any desired service can be obtained through electric switches.

Each of three pumps operates an individual system, but the pumps have three-way valves so that in an emergency all pumps can be placed on one system. A cross-over manifold permits interconnecting of the pumps for any service.

The pumping equipment comprises three units, one for deck use, one for engine room bilge and one for the fish hold. All pumps are the same 1¼" Jabsco model for interchangeability of parts. There is a common discharge for the engine room and fish hold pumps.

A 2" by-pass on the 3" main engine discharge, supplies water on deck for wash down, deck cooling and fire use. A 2" hose furnishes a constant stream of service water on deck at all times when the main engine is operating. The electrically driven deck wash pump is used only when the engine is not running. There is a 1¼" Jabsco separate pump for fo'c's'le bilge, and an Edson hand deck pump for emergency use.

The arrangement on the *Maris Stella* eliminates duplication of equipment usage and prevents back up of water from the sea suction. When a single pumping system is used, bilge water comes through the deck wash pump. By utilizing the engine discharge water, the *Maris Stella* crew has clean, warm water on deck continuously.

Engine Installation

Propulsion power for the *Maris Stella* is supplied by a D397 turbocharged Caterpillar Diesel with 4.375:1 reduction gear, rated 550 hp. at 1300 rpm., which gives her a speed of 11 knots. The engine is equipped with a Maxim silencer and swings a new 5-blade, 66 x 46 Columbian propeller on an 8" bronze-sleeved steel shaft with Goodrich Cutless stern bearing. A separate engine, used to drive the New England winch, is a D318, 148 hp., 1800 rpm. turbocharged Caterpillar Diesel, with 3:1 reduction gear and Twin Disc clutch. Both engines were furnished by Houghton-Arnold Machinery Co. of Portland.

A special feature is the use of type metal for bedding down the engine. The metal is a combination of lead, bismuth and antimony which is heated and poured in molten state between the engine and engine beds to a thickness of approximately ¾ inch. With this method, 100 percent bearing surface is obtained, and the holes for the hold-down bolts are drilled after the metal is poured.

The entire vessel was rewired and a new switchboard installed. Generating equipment comprises a 20 kw.

General Electric generator off the main engine, an auxiliary 10 kw. G. E. generator belt driven from the winch engine and a 5 kw. G.E. emergency unit driven by a 2 cylinder 12 hp., Lister-Blackstone Diesel.

A set of Surrette HHG-31, 110-volt batteries is used for lighting and general service, while a set of Surrette GTS-29, 32-volt batteries is used for engine starting and for operating the lorans. The starting batteries are charged from the 110-volt system by three battery chargers. There is a "Safety" carbon pile voltage regulator on the main generator, and the vessel's electrical system is designed for simple, fool-proof operation.

Navigating Equipment

The *Maris Stella* is rigged to fish from one side only, but a spare set of trawl doors is carried. She has a New England trawl winch, new 6" Hathaway gallows frames and bollards, and uses 3/4" British Ropes steel core trawling cable and "American" cordage supplied by A. L. Griffin, Inc., Linen Thread nets and Westerbeke doors. Other equipment includes a 9-man Seafarer inflatable life raft in fiber glass container, furnished by Capt. A. J. Pedersen, 5 hp. New England electric fish hoist and 500 lb. anchor.

The *Maris Stella* has a full complement of navigating equipment, including new Bendix DR-12 depth recorder, new 150-watt Model 1650 Ray Jefferson radiotelephone with Model RS111 remote control, and two APN/9 lorans, all supplied by The Harris Co. She also has new Raytheon 1500 Mariners Pathfinder radar and new Atlas-Werke fish finder, furnished by Northeast Communications Corp.; new White compass, Bludworth direction finder, Edison pedestal-type reduction gear steerer and Kahlenberg electric fog horn.

Accommodations are provided for 12 men in the fo'c's'le and one in the after cabin, with the Captain's stateroom adjoining the pilot house. The galley has a Shipmate oil-burning range, and the after quarters are heated by a new 4-section Crane oil-fired hot water boiler.

Fuel capacity is 4500 gallons, and Gulf fuel oil is used. Lubricating oil is Mobil Series 3 high detergent 5230 Delvac. Henderson & Johnson Gloucester paint was used on the bottom, while Dupont finishes, supplied by A. L. Griffin, Inc. was used for topsides and interior. All metal work is protected with Rustoleum primer.

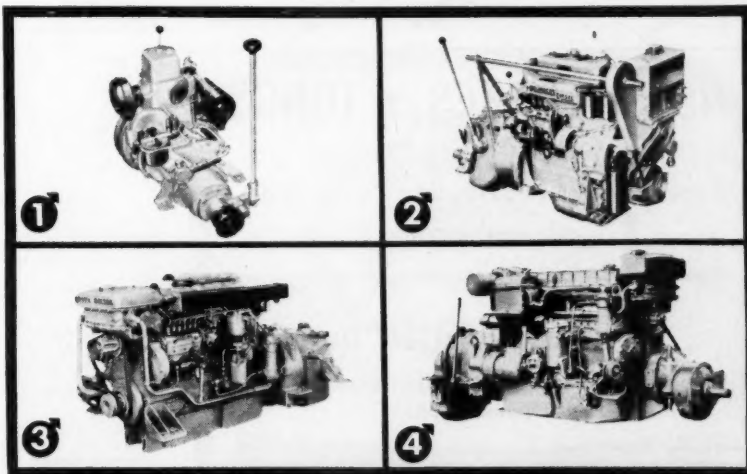
Gowen also operates the 97' dragger *Theresa R.*, Capt. Jens S. Buelt, under the name of Cumberland Fisheries; and the 60' whiting dragger *Surfman*, Capt. Robert Lowell.

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Model	HP	RPM	No. Cyl.	Weight
MD 1	5*	2000	1	300 lbs.
1113 BR	50*	2000	3	1500 lbs.
MD 47	71*	2000	6	1435 lbs.
TIMD 96	185*	1800	6	2205 lbs.

*Continuous rated hp. Direct-injection, 4-cycle diesels.

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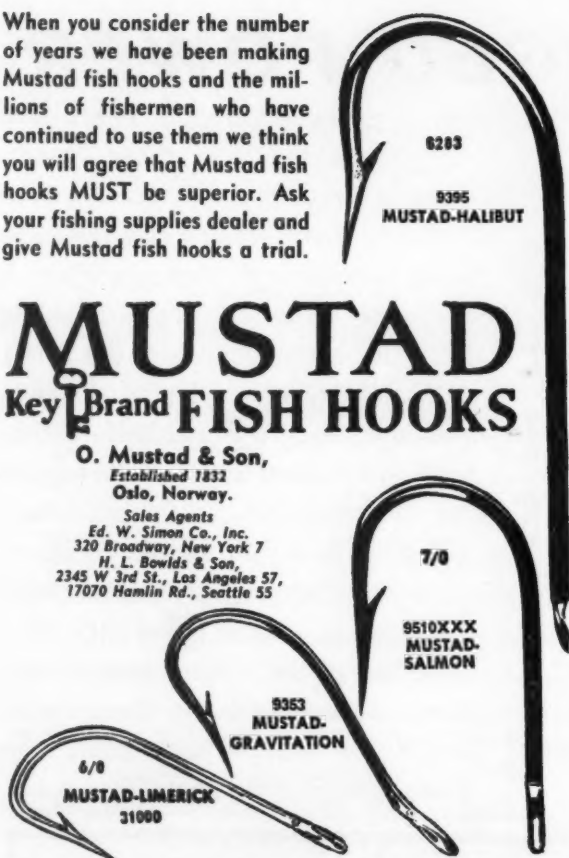
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BOAT CATCHES

For Month of April

Hailing fares. Figure after name indicates number of trips.

BOSTON (Mass.)

Agatha (2)	133,700	Michigan (2)	207,600
Agatha & Patricia (1)	52,500	Minnie (3)	398,500
Annie & Lucy (1)	5,300	Mother Frances (3)	176,300
Arlington (3)	491,000	Nautilus (3)	243,500
Atlantic (3)	262,800	New Star (2)	225,200
Baby Rose (2)	175,900	Notre Dame (4)	137,600
Bonaventure (2)	179,300	Ohio (2)	259,200
Bonnie (2)	156,800	Olympia (1)	15,000
Buzz & Billy (3)	131,800	Olympia La Rosa (3)	159,600
Cambridge (2)	209,200	Pam Ann (3)	239,600
Caracara (4)	213,800	Patty Jean (2)	258,700
Carmela Maria (1)	23,000	Phantom (2)	268,500
Carmen & Vince (3)	184,400	Philip & Grace (1)	86,500
Charlotte M. (3)	235,800	Pilgrim (2)	191,500
Clipper (3)	234,200	Plymouth (2)	177,300
Columbia (3)	210,400	Puritan (2)	131,500
Comet (2)	229,500	Racer (2)	251,500
Dolphin (2)	147,600	Red Jacket (3)	484,800
Eagle (2)	157,900	Rosa B. (3)	396,800
Emily H. Brown (1)	95,800	Rosie (1)	8,800
Ethelena (3)	228,200	Rosie C. (2)	152,500
Flying Cloud (2)	316,500	St. Angelo (1)	26,300
Four (2)	158,000	St. Marco (4)	202,100
Glenn (2)	141,500	St. Nicholas (1)	96,800
Grace & Salvatore (1)	84,200	St. Victoria (1)	70,400
Hazel B. (1)	78,400	San Calogero (1)	11,300
Heroic (1)	66,200	Swallow (2)	107,100
Jane B. (2)	129,700	Terra Nova (2)	238,500
J. B. Junior (1)	120,300	Texas (2)	207,400
Jeanne D'Arc (3)	195,800	Thomas D. (4)	206,300
Leonard & Nancy (1)	38,900	Thomas Whalen (2)	106,800
Magellan (3)	167,200	Villanova (3)	176,300
Manuel F. Roderick (2)	131,400	Weymouth (2)	147,400
Margaret & Rose (3)	149,700	Wm. J. O'Brien (2)	205,000
Mary & Joan (3)	238,100	Winchester (2)	212,700
Medan (1)	92,700	Wisconsin (2)	264,500
		Yankee (1)	5,600

Scallop Landings (Lbs.)

Florence & Lee (2)	26,200	Laura A. (2)	25,200
Hilda Garston (3)	38,400	Lauren Fay (2)	18,000
John Michael X (1)	11,000		

GLOUCESTER (Mass.)

Agatha (2)	140,000	Mary Ann (5)	74,000
Agatha & Patricia (1)	35,000	Mary Rose (3)	270,000
American Eagle (2)	14,500	Morning Star (2)	12,000
Blue Waters (2)	210,000	Natale III (5)	55,500
Bonaventure (1)	35,000	Ocean Wave (2)	230,000
Carlo & Vince (1)	5,000	Olympia (3)	57,000
Cigar Joe (3)	55,000	Philip & Grace (2)	60,000
Curlow (2)	340,000	Puritan (1)	105,000
Doris F. Amero (2)	55,000	Regina Maria (4)	230,000
Eagle (1)	70,000	Rhode Island (4)	131,000
Emily H. Brown (2)	225,000	Rosalie S. (3)	27,000
Estrela (1)	220,000	Rose & Lucy (4)	15,500
Evelyn L. Brown (2)	230,000	Rosemarie (3)	95,500
Flow (1)	250,000	Rosie & Gracie (4)	65,000
Gaetano S. (2)	112,000	St. Anna Maria (2)	14,000
Grace & Salvatore (2)	145,000	St. Cabrini (2)	8,000
Hazel B. (1)	45,000	St. Joseph (4)	170,000
Holy Family (1)	15,000	St. Mary (3)	59,000
Holy Name (2)	131,000	St. Nicholas (1)	180,000
Ida & Joseph (4)	50,000	St. Peter (4)	84,000
Immaculate Conception (2)	42,000	St. Peter III (5)	114,000
Jackie B. (2)	13,000	St. Rosalie (3)	42,000
Jennie & Lucia (5)	38,000	St. Terese (5)	30,500
Joseph & Lucia (4)	250,000	Salvatore & Grace (3)	76,500
Judith Lee Rose (2)	575,000	Sebastiana C. (5)	76,000
Kingfisher (1)	210,000	Serafina N. (5)	24,000
Lady of the Rosary (4)	119,000	Serafina II (6)	78,500
Little Flower (1)	7,000	Sunlight (1)	140,000
Magnolia (2)	365,000	Theresa M. Boudreau (2)	426,000
Marianna II (1)	10,000	Villanova (1)	220,000
		Vincie N. (4)	107,000
		Virginia Ann (2)	13,000
		Wild Duck (2)	165,000

Scallop Landings (Lbs.)

Sylvester Whalen (1)	11,000
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NEW BEDFORD (Mass.)

Adventurer (2)	37,500	Major J. Casey (3)	65,500
Agda W. (2)	31,000	Malvina B. (1)	13,100
Althea (4)	57,500	Marie & Katherine (3)	60,700
Anastasia E. (3)	29,900	Martha E. Murley (2)	16,000
Annie Louise (4)	41,800	Mary E. D'Eon (2)	29,800
Annie M. Jackson (3)	37,000	Mary J. Landry (3)	51,000
Arnold (1)	11,300	Mary Tapper (3)	66,600
Barbara M. (3)	71,000	Midway (2)	54,300
Brant (3)	50,700	Minkette (1)	8,000
Cap'n Bill II (3)	55,000	Miriam A. (1)	31,600
Capt. Deebold (2)	39,500	Molly & Jane (4)	72,400
Carl Henry (3)	67,000	North Sea (3)	72,500
Catherine & Mary (3)	76,400	Pauline H. (3)	259,200
Charles E. Beckman (1)	8,500	Pearl Harbor (2)	40,000
Christina J. (3)	100,700	Phyllis J. (3)	37,500
Christine & Dan (2)	26,500	Porpoise (1)	22,000
Comber (3)	16,500	Richard Lance (2)	45,000
Elizabeth N. (1)	19,000	Roann (2)	22,400
Eugene H. (2)	30,000	Robert Joseph (2)	49,200
Falcon (3)	71,800	Roberta Anne (2)	43,000
Friendship (4)	113,500	Ruth (3)	80,000
Gannet (2)	85,200	Sea Gold (3)	37,000
Gertrude D. (1)	10,700	Sea Ranger (2)	43,900
Glen & Maria (2)	36,500	Shannon (1)	25,000
Growler (2)	52,800	Sharon Louise (2)	55,000
Harmony (3)	48,500	Skipjack (2)	51,500
Hope II (2)	44,500	Smilyn (2)	40,000
Invader (3)	123,900	Solveig J. (3)	169,300
Ivanhoe (3)	57,300	Sunbeam (2)	36,500
Janet & Jean (2)	38,100	Susie O. Carver (2)	15,000
Jimmy Boy (1)	10,200	Teresa & Jean (2)	59,400
Joan & Ursula (3)	54,300	Theresa (1)	10,000
John G. Murley (2)	156,000	Two Brothers (4)	25,700
Julia DaCruz (3)	52,100	Val T. (3)	67,900
Katie D. (3)	210,500	Valiant Lady (2)	35,400
Kelbarsam (1)	11,300	Venture I (3)	118,600
Libby (3)	71,900	Viking (2)	67,000
Lorine III (2)	30,500	Villa-Rial (4)	81,900
Louis A. Thebaud (3)	70,500	Whaler (3)	118,600
Lynn (1)	14,600	Whaling City (2)	45,300
		Winifred M. (1)	6,600

Scallop Landings (Lbs.)

Aloha (3)	36,600	Lubenray (3)	33,600
Alpar (2)	20,700	Malene & Marie (3)	36,600
Amelia (3)	33,600	Mary Ann (3)	33,600
Babe Sears (2)	22,400	Mary J. Hayes (2)	22,600
Baltic (3)	33,600	Mary Jane (1)	11,200
Barbara & Gail (3)	34,600	Nancy Jane (2)	22,400
Bright Star (3)	36,600	Neptune (3)	36,600
Camden (2)	22,400	New Bedford (3)	36,200
Carol & Estelle (1)	12,200	Newfoundland (1)	11,200
Catherine B. (3)	36,600	Noreen (3)	36,400
Catherine C. (3)	33,600	Patty Jean (1)	11,200
Charles S. Ashley (3)	35,600	Pelican (2)	24,400
Clipper (3)	35,600	Porpoise (1)	12,200
Dartmouth (3)	36,600	Prowler (3)	36,600
Debbie & Jo-Ann (2)	23,400	Ruth Lea (2)	22,400
Edgartown (4)	47,800	Ruth Moses (2)	23,100
Fairhaven (2)	24,400	Sandra Jane (4)	48,800
Flamingo (3)	35,600	Sippican (4)	47,800
Fleetwing (3)	36,400	Snoopy (3)	37,000
Florence B. (3)	36,600	Stanley B. Butler (3)	36,600
Geraldine (4)	46,800	Stanley M. Fisher (2)	24,400
Ike & Jens (3)	36,600	Sunapee (3)	36,600
John Michael X (1)	12,700	Tocsin (3)	33,600
Josephine & Mary (3)	34,000	Ursula M. Norton (4)	47,800
Kingfisher (2)	22,400	Vivian Fay (4)	48,800
Lillian B. (3)	35,600	Wamsutta (3)	34,600
Linus S. Eldridge (3)	33,600		

PORTLAND (Me.)

Alice M. Doughty II (5)	80,500	Mary & Jennie (9)	23,500
Ariel (5)	17,400	Mascot (5)	8,300
Dorchester (1)	197,000	Ocean Life (2)	480,000
Dorothy & Ethel (1)	6,000	Quincy (1)	180,000
Elmor & Jean (4)	38,500	St. George (2)	390,000
Gulf Stream (2)	460,000	Surfman (6)	10,900
Kennebec (4)	117,000	Theresa R. (2)	109,500
Lady of the Rosary (1)	3,000	Vagabond (3)	87,500
Lawrence Scola (2)	10,300	Vandal (3)	166,500
Marianna II (1)	5,000	Vida E. II (14)	40,200
Maris Stella (1)	108,000	Wawenock (1)	185,000
Mary & Helen (15)	34,300	Winthrop (1)	200,000

Scallop Landings (Lbs.)

Abram H. (1)	5,000	Rita B. (2)	32,500
Francis L. MacPherson (1)	12,000	Sylvester F. Whalen (1)	15,000

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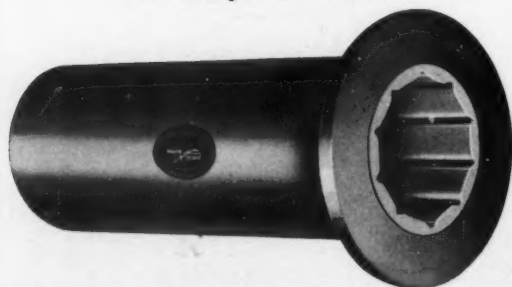
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- Nets stay cleaner and whiter longer!
- Nets are easier to handle since they absorb less water!
- Nets have much greater resistance to marine organisms!

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WOODS HOLE (Mass.)

America (1)	2,700	Mary & Gloria (1)	5,500
Arnold (2)	11,200	Medrie (1)	2,700
Bernice (2)	24,800	Mildred W. (3)	4,900
Betty B. (2)	7,100	Minkette (4)	18,900
Cap'n Bill III (2)	60,900	Morning Star (6)	6,600
Curlew (5)	30,100	Nellie M. Stanley (1)	3,300
Driftwood (1)	1,700	Reliance (4)	6,900
Franora (6)	29,300	Rita (1)	3,400
Gertrude D. (1)	9,200	Rosemary R. (1)	5,100
Irene & Walter (1)	3,500	Southern Cross (1)	1,600
Janet Elise (1)	4,200	Theresa (1)	1,100
Kelbarsam (1)	1,600	Three Bells (1)	1,900
Luann (1)	3,500	Viking (5)	8,800
Madeline (4)	17,300	William B. (2)	6,200

NEW YORK

Andrea G. (3)	258,600	Joseph S. Mattos (2)	147,100
Austin W. (1)	46,500	Lady of Good Voyage (3)	184,900
Carol-Jack (4)	311,900	Manuel P. Domingoes (2)	147,800
Edith L. Boudreau (2)	139,000	Sandra & Jean (2)	90,500
Evelina M. Goulart (2)	129,500	Santa Maria (3)	191,100
Golden Eagle (1)	82,400	Tina B. (3)	249,000
J. B. N. (3)	154,200		

Scallop Landings (Lbs.)

Beatrice & Ida (1)	11,000	Maridor (2)	20,500
Enterprise (1)	11,000	Muskegon (3)	24,200
Felicia (3)	33,000	Norseman (2)	22,500

ROCKLAND (Me.)

Araho (2)	122,000	Louise G. (3)	32,000
Brighton (2)	370,000	Mabel Susan (4)	39,000
Ellin B. (3)	145,000	Ocean (1)	220,000
Ethel B. (3)	11,500	Squall (1)	225,000
Flo (1)	30,000	Storm (2)	280,000
Helen Mae II (3)	112,000	Surf (1)	260,000
John J. Nagle (2)	340,000	Tide (1)	220,000
Little Growler (4)	195,000	Wave (1)	240,000

Scallop Landings (Lbs.)

Pocahontas (3)	33,000
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Key to Fisheries Expansion

(Continued from page 8)

foods on hand," she went on to say. "In a matter of minutes, it travels from storage locker to kitchen and thence to the table, where in one of its many attractive forms it is ready to intrigue the palates of our thousands of students. Seafood looks good, wholesome, attractive."

Westrich, who spoke on "Fish and Seafoods in Cafeterias," told his audience that a centralized distribution of seafood has assured the Morrison chain of uniformity and supply in all operations. This includes 30 cafeterias, five Imperial Houses, 65 food services, plus the Morrison Catering Co. All these operations serve four and more varieties of seafood daily. "We find," he said, "that well-displayed seafood with eye appeal, high quality and uniformity assures us of repeat business and increased sales. Sales on some of our seafood are in excess of one million pounds a year."

Speaker on "Fish and Seafoods in Hotel Catering" was Geltman, who said, "Seafood is a staple item on Fontainebleau menus, which comprises 15 to 20 percent of sales; but it has a value equal to an item which comprises 80 percent of sales. There is no limit to the variety and color which can be displayed with seafood."

"As in other industries," he said, "there should be Government inspection at dealer level and on a voluntary basis. This would instill confidence among restaurant owners and patrons. A great advantage in items such as frozen shrimp, refrigerated crabmeat and lobster, which arrive at net weight, is that your portion control can be ascertained simply, which is a great help today with rising food costs. The most important thing is that if the quality is first class, there is no problem in preparation or service."

Food Additive Amendment

"The problem of untested or questionable chemicals in food is one of extreme importance, and the Food Additives

Amendment is designed to deal squarely with this problem," said Dr. K. L. Milstead in discussing the new amendment to the Federal Food, Drug and Cosmetic Act. Milstead is Director of the Division of Regulatory Management, Bureau of Enforcement, Food and Drug Administration.

Under the Food Additive Amendment, which became fully effective in March, only those substances "generally recognized to be safe" and appearing on the FDA's so-called "white lists" may be an acceptable ingredient, Milstead said. "We have refused all entries into this country of fish that contain nitrites and several seizures have been made of products that were originally exported from Canada or Nova Scotia" said Milstead, in citing an example of action taken under the amendment. "However, there apparently has been very little use of sodium nitrite in this country for preservation of fresh or frozen fish."

Cuba and the United States, despite political differences, will send representatives to a joint conference of commercial fishing resources, pending Congressional ratification of the proposed Tortugas Shrimp Convention. Donald McKernan, Director of the Bureau of Commercial Fisheries, U.S. Department of Interior and a featured speaker at the Convention, explained that the dry Tortugas area is important to commercial fishing interests of both countries "and I believe by meeting and discussing our mutual problems a satisfactory plan for conservation can be reached". McKernan is one of three commissioners named to represent the United States at the proposed convention.

In commenting on the failure of the 88 countries represented at the recent "Law of the Sea" Convention in Geneva to reach satisfactory conclusions on the territorial sea and jurisdiction of fisheries issues, McKernan said "In cases where the United States is involved with Canada and the Central American countries—I feel successful bi-lateral or multi-lateral agreements can be reached at meetings similar to the Tortugas Shrimp Convention".

J. Roy Duggan, Vice-President of SeaPak Corp., St. Simon's Island, Ga., was given the Fisheries Service Award by Ralph Carr, outgoing president of the Institute, in recognition of Duggan's long and devoted service to the American fishing industry.

New vice-presidents are Stanley W. Letson, Maine Marine Products, Inc., Portland, Me.; Richard Kulze, South African Rock Lobster Service Assn., New York; J. Roy Duggan, SeaPak Corp., St. Simons Island, Ga.; Ray Lemoi, Rayola Co., Los Angeles, Cal.; James Pinkerton, Ketchikan Cold Storage Co., Ketchikan, Alaska; Bernard Benkowitz, Live Fish Co., Pittsburgh, Pa.

Besides the three days of general sessions, Institutional Market Day, and election of officers, Convention activities under the chairmanship of Sydney K. Opler, Florida Frozen Food Processors, Inc., Miami, included committee meetings, an Hawaiian luau, functions for Old Timers and Minnows, and concluded with the presentation of awards and dinner-dance.

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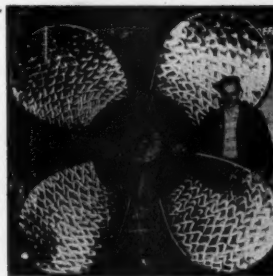
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A NEW TYPE MIDWATER TRAWL with stubby wings, a plywood body, rear elevators or tails, and an air tank under the wings, has been developed by a Nova Scotia man.

When fish are detected on an electronic fish finder, the air tank is filled to a pressure matching that at the depth of the fish. When air pressure and water pressure are equalized, the trawl stays on an even keel.

Hydraulic controls connected to the tank regulate the rear elevators to make the device rise or dive. Astern, a new type net is towed by four warps or cables, one to each corner.

The net has a square mouth with short otter boards at each corner, rigged so that a 90° angle is maintained constantly at each corner.

HERRING PURSE-SEINE operators in Nova Scotia and New Brunswick may not set their nets within half a nautical mile of herring weirs during the summer season, under new legislation announced recently by Fisheries Minister J. Angus MacLean.

This increase in distance between weir and purse-seine operations is provided for in amendments to the Fishery Regulations of the two provinces.

These amendments specify that no person shall set or operate a purse-seine from April 15 to November 15, both days inclusive, within one-half a nautical mile of any weir, trap-net or other stationary fishing appliance that is operated under license.

Also from November 16 to April 14 in the year following, both days inclusive, no purse-seine may be operated within 2,000 feet of any weir, trap-net or other stationary fishing appliance operated under license.

SHRIMP PONDS are being planned by a Japanese firm. The corporation, with head offices in Tokyo, is building Japan's first hatchery and rearing plant for "kuruma" shrimp, in abandoned salt ponds at Takamatsu in Kagawa Prefecture.

The complete rearing of shrimp from the egg to the adult stage is planned. The shrimp farm is cited an example of how to utilize abandoned solar-salt beds.

The president of the firm, after experimenting 10 years in his laboratory, has finally succeeded in complete artificial propagation from the egg to the adult stage.

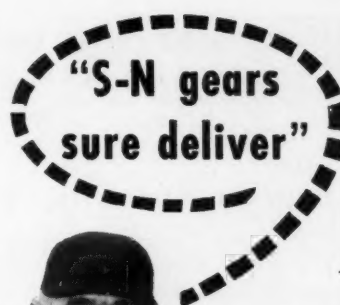
The company is planning also to supply larval and juvenile shrimp for rearing purposes to coastal fishermen at reasonable prices.

Thus the company's operations will aid the development of shrimp culture and contribute to the prosperity of coastal fishery enterprises by solving the problems of difficult supply and high prices of seed shrimp.

THE MEXICAN FLEET MAY NOT carry out marine fishing activities within 9 nautical miles of her boundaries with other countries, according to a Mexican Executive Decree.

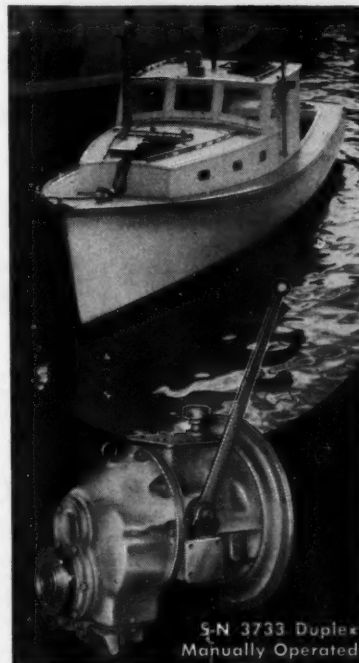
Nonfishing zones for Mexican vessels are being set up that extend 9 miles into the sea along the borders and 9 miles along the Mexican coast adjacent to the borders.

Further, Mexican vessels are only authorized to fish in Mexican territorial waters or on the high seas unless it has been properly established that another country has granted permission for Mexican vessels to fish within her territorial waters. Mexico claims 9 nautical miles as territorial waters.



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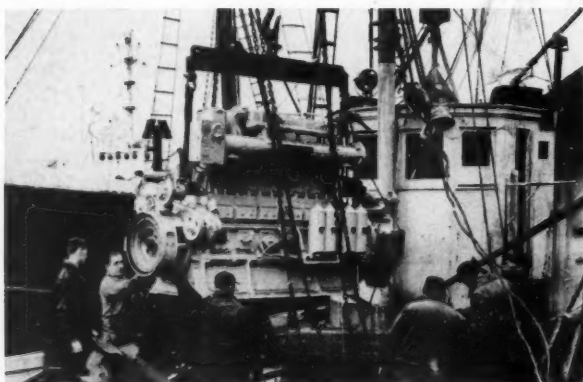
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